NOVEMBER 30, 1959

PAPER TRADE JOURNAL

How Does Tall Oil Production, Consumption Stack Up to 1965?

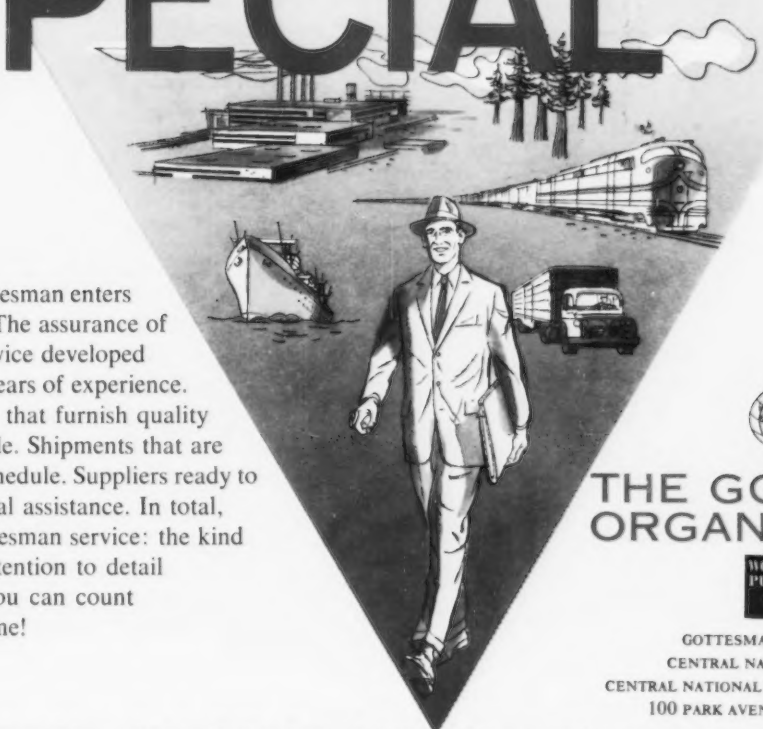
Buckeye Saves Building Time, Costs Using Precision Models

No. 2 Fourdrinier Installed in Record Time at Newton Falls

Further Data Finds Outside Chip Storage Feasible in the South

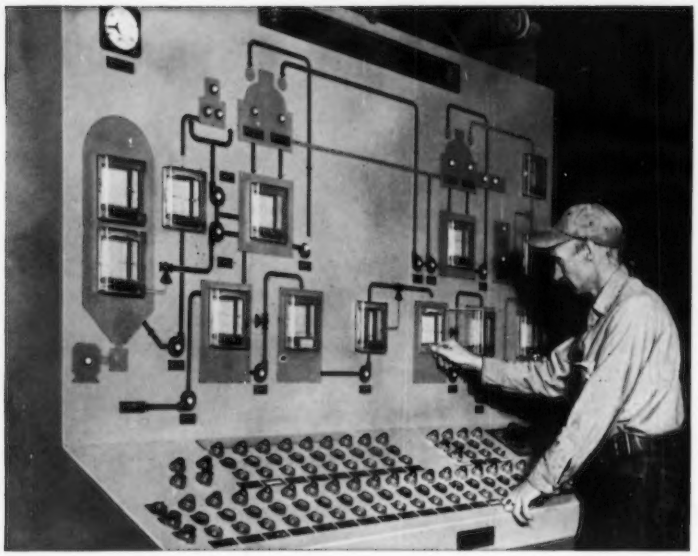
Editorial Dept.
University Microfilms, Inc.
313 N. First St.
Ann Arbor, Mich.

YOU GET
SOMETHING
SPECIAL



...when Gottesman enters the picture! The assurance of excellent service developed by over 70 years of experience. Pulp sources that furnish quality in every grade. Shipments that are always on schedule. Suppliers ready to offer technical assistance. In total, you get Gottesman service: the kind of special attention to detail you know you can count on, every time!

THE GOTTESMAN ORGANIZATION
Established 1886
WOOD PULP
PULP PAPER EXPORT
GOTTESMAN & COMPANY, INC.
CENTRAL NATIONAL CORPORATION
CENTRAL NATIONAL COMMERCIAL COMPANY, INC.
100 PARK AVENUE, NEW YORK 17, N. Y.
Gottesman & Company Aktiebolag, Stockholm, Sweden • Central National-Gottesman Limited, London, England • Representatives in 55 Leading World Ma



HONEYWELL GRAPHIC PANEL controls the Dorr-Oliver washing system. The new mill was built for $7,000,000.

Honeywell controls help reduce cost of new Waldorf-Hoerner Paper Products Co. mill

With closely-knit, complete mill instrumentation, this revolutionary new pulp mill at Missoula, Montana, produces 250 tons of bleachable-grade kraft pulp per day, with a surprisingly small work force.

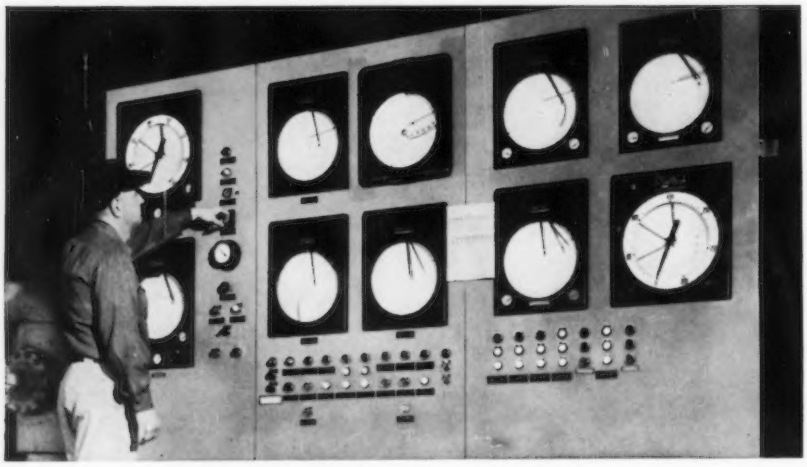
The brain child of Nels H. Sandberg, president of the Montana company, the entire mill features many processing innovations for efficient, profitable operation through automatic control.

This is another example of how mill instrumentation, complete from concept to startup, pays daily dividends. Your nearby Honeywell field engineer can show you how to gain the advantages of instrumentation in your own mill. Call him today . . . he's as near as your phone.

MINNEAPOLIS-HONEYWELL, Wayne and Windrim Avenues, Philadelphia 44, Pa.

Honeywell

H HONEYWELL *First in Control*

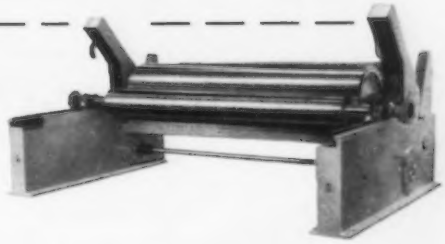


HONEYWELL RECORDERS AND CONTROLLERS operate the digesters. The mill plans to produce 500 tons of pulp a day in 1960.

Clark-Aiken EQUIPMENT

Manchester Machines

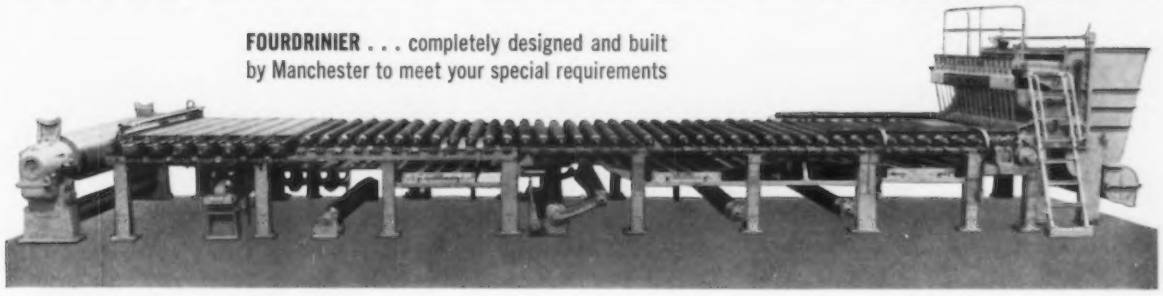
CANTILEVER SUCTION COUCH ROLL . . .
for more efficient water removal



UNIFORM SPEED REEL . . . for tight rolls every run

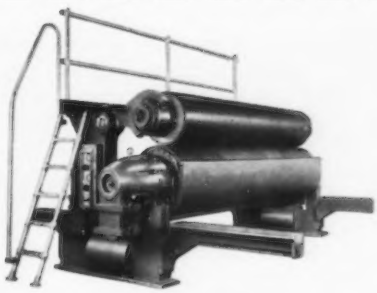
produce better paper

FOURDRINIER . . . completely designed and built by Manchester to meet your special requirements



AT LOWER COST

WINDER AND SLITTER . . .
for uniformly wound straight rolls



SUCTION PRESS . . .
for a higher drying rate

THE MANCHESTER MACHINE COMPANY
MIDDLETOWN, OHIO

SPECIALISTS IN DESIGNING AND BUILDING PAPER MILL MACHINERY

MMC

Clark-Aiken EQUIPMENT

trims costs and paces production at

UNITED STATES ENVELOPE COMPANY

Clark-Aiken Roll Stand, Type D Cutter
and Overhanging Piler boosts production while
lowering operating costs at The Seaboard Division of
United States Envelope Company, Metuchen, New Jersey.
Cutter and Piler handle sheets up to 64 inches wide.

CLARK-AIKEN EQUIPMENT - GEARED TO MODERN FINISHING ROOM REQUIREMENTS FOR FAST, PRACTICAL AUTOMATION THAT MEANS GREATER ACCURACY, BETTER QUALITY AND HIGHER PROFITS...

It's axiomatic in industry that profits depend on production. This axiom takes on even greater significance in the modern finishing room where the key to top production lies in the new concept of practical automation—engineered by Clark-Aiken to fit your specific needs. Progressive management turns more and more to the trained experts at Clark-Aiken for the solution to production problems.

An acknowledged leader in the manufacture of paper mill machinery for more than a century, Clark-Aiken now shows the way in the development of automated, custom-built machinery for greater accuracy, faster, more efficient materials handling and increased production.

You can realize the benefits of automation in your own finishing room by consulting Clark-Aiken engineers. A concentrated study of your operations and shop conditions assures you of qualified recommendations for an integrated system of automation that fits **your** particular requirements.

Whatever your finishing room production problem —consult Clark-Aiken for qualified and interested attention.

THE *Clark-Aiken* COMPANY

956 SPRINGFIELD ROAD

LEE, MASSACHUSETTS

PAPER TRADE JOURNAL

PUBLISHED WEEKLY SINCE 1872

Week of NOVEMBER 30, 1959—*Vol. 143, No. 48*

TRENDS 11

NEWS OF THE WEEK 13

FEATURE ARTICLES

How a Bleach Plant Model Reduced Engineering Costs for Buckeye 24

Newton Falls Paper Installs New Fourdrinier in Record Time 27

The Outlook for Tall Oil Production and Consumption .. 30

Further Progress on the Outside Storage of Southern Pine Chips 34

PAPER PEOPLE 16
NEWS OF CONVERTERS 21
NEW LITERATURE 29
NEWS OF SUPPLIERS .. 37
FIGURES OF THE WEEK 40
PRICES OF FIBERS 42
CLASSIFIED ADVERTISING 45
ADVERTISERS INDEX .. 50

JOHN C. W. EVANS
Editor

PAUL D. VAN DERVEER
Associate Editor

R. E. THUEMMES
Associate Editor

HARRY L. DYER
Assistant Editor

K. E. PATTERSON
Assistant Editor

L. HAMEL
Production Editor

W. M. PERRY
Staff Artist

LOCKWOOD TRADE JOURNAL CO., INC.
49 West 45th Street, New York 36.
Plaza 7-2370

GEORGE E. LOCKWOOD.....President and Treasurer
ARTHUR E. GORDON.....Vice President
FREDERICK E. WINKLER.....Secretary

Published by Lockwood Trade Journal Co., Inc., at 34 North Crystal St., East Stroudsburg, Pa. Second class postage paid at East Stroudsburg, Pa. Printed in U.S.A. Copyright 1959 by Lockwood Trade Journal Co., Inc. **Paper** established Feb. 17, 1899, combined with **Paper Trade Journal** Nov. 16, 1899. **Paper** established Sept. 21, 1910, combined with **Paper Trade Journal** February 19, 1926. All rights to the above titles reserved. Also publishers of **Lockwood's Annual Directory of the Paper and Allied Trades.**

REMEMBER THESE DATES

December 1-2. National Council for Stream Improvement, Inc., Pulp and Paper Industrial Waste Conference, Edgewater Beach Hotel, Chicago, Ill.

January 26-29. Technical Section, Canadian Pulp and Paper Ass'n., Queen Elizabeth Hotel, Montreal. Note meeting starts Tuesday.

February 22-25. Paper Week in New York.

SUBSCRIPTIONS →

Paper & Pulp Mills, Converters and their Personnel	1 yr.	2 yrs.	3 yrs.
United States and Canada ...	$5.00	$8.00	$10.00

All companies or individuals not engaged in the manufacture of paper and pulp, or in the converting thereof; U.S.A. and Canadian price per year: $7.50

Latin American Countries	15.00	25.00	30.00
All Other Countries	20.00	30.00	40.00

Single copy price of current issues:
North America 50c Foreign $1.00

R. E. BOETSCH Director of Circulation

PAPER TRADE JOURNAL—49 W. 45th St., N.Y. 36, N.Y.
Please enter a subscription with the mailing address as follows:
Name .....
Address .....
City..... Zone.... State.....
If subscription is for an individual, please fill in:
Employer..... City..... State....
Position..... Employer's Business.....
Amount $ ..... ☐ Bill Me ☐ Bill Company ☐ Check Attached

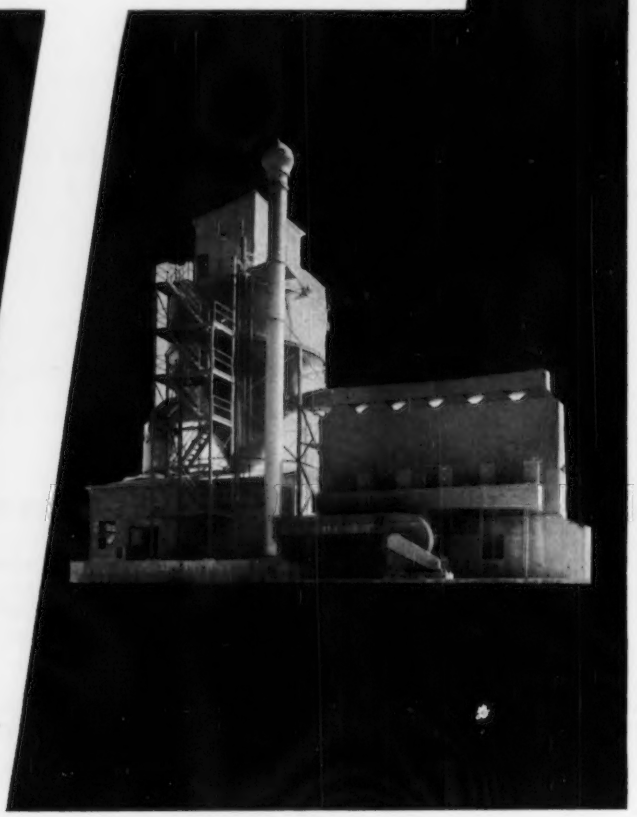
Thiele Kaolin

water-washed
spray-dried
COATING CLAYS

- EXCELLENT COLOR
- HIGH BRIGHTNESS
- UNIFORM LOW VISCOSITY
- UNIFORM LOW MOISTURE CONTENT
- UNIFORM LOW SOLUBLE SALT CONTENT

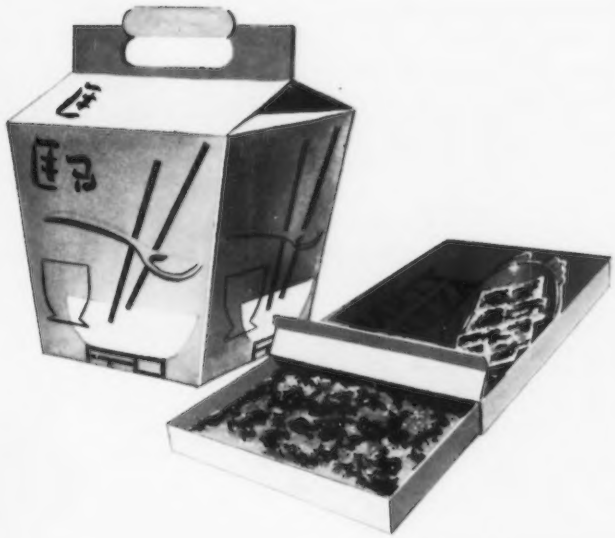
UNLIMITED RESERVES

Write for full information and sample of Thiele Kaolin coating or filler clay for your particular use.

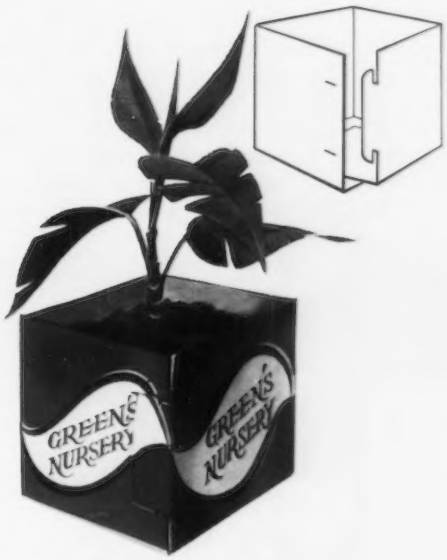


Thiele Kaolin Company

P. O. BOX 270 • SANDERSVILLE, GA.



TAKE-HOME FOOD CARRIER
Distinctive cartons for Chinese foods, spaghetti, pizza, ravioli . . . for restaurants, drive-ins, caterers.



EZY-OPEN SEEDLING POT . . . makes transplanting quick, easy. Simply pull open; plant drops into ground. Guards against root injury.

NEW MERCHANDISING AIDS TO BOOST YOUR BUSINESS WITH LOCAL RETAILERS!

BOUQUET CONE . . . for fresh cut flowers. Attractive carry-home container holds flowers securely, retains water.

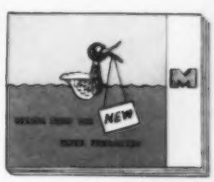
TOSS-AWAY SALAD BOWL . . . makes salad a convenience food. Just add dressing and serve. Lets produce markets use up low or broken stocks of fresh vegetables.

Looking for new paper products you can make and sell? Here are four, suitable for a variety of businesses. They can be made of hard-sized, liquid-resistant paper stocks available now from mills who size their paper and board with Monsanto's **MERSIZE.**®

Monsanto®

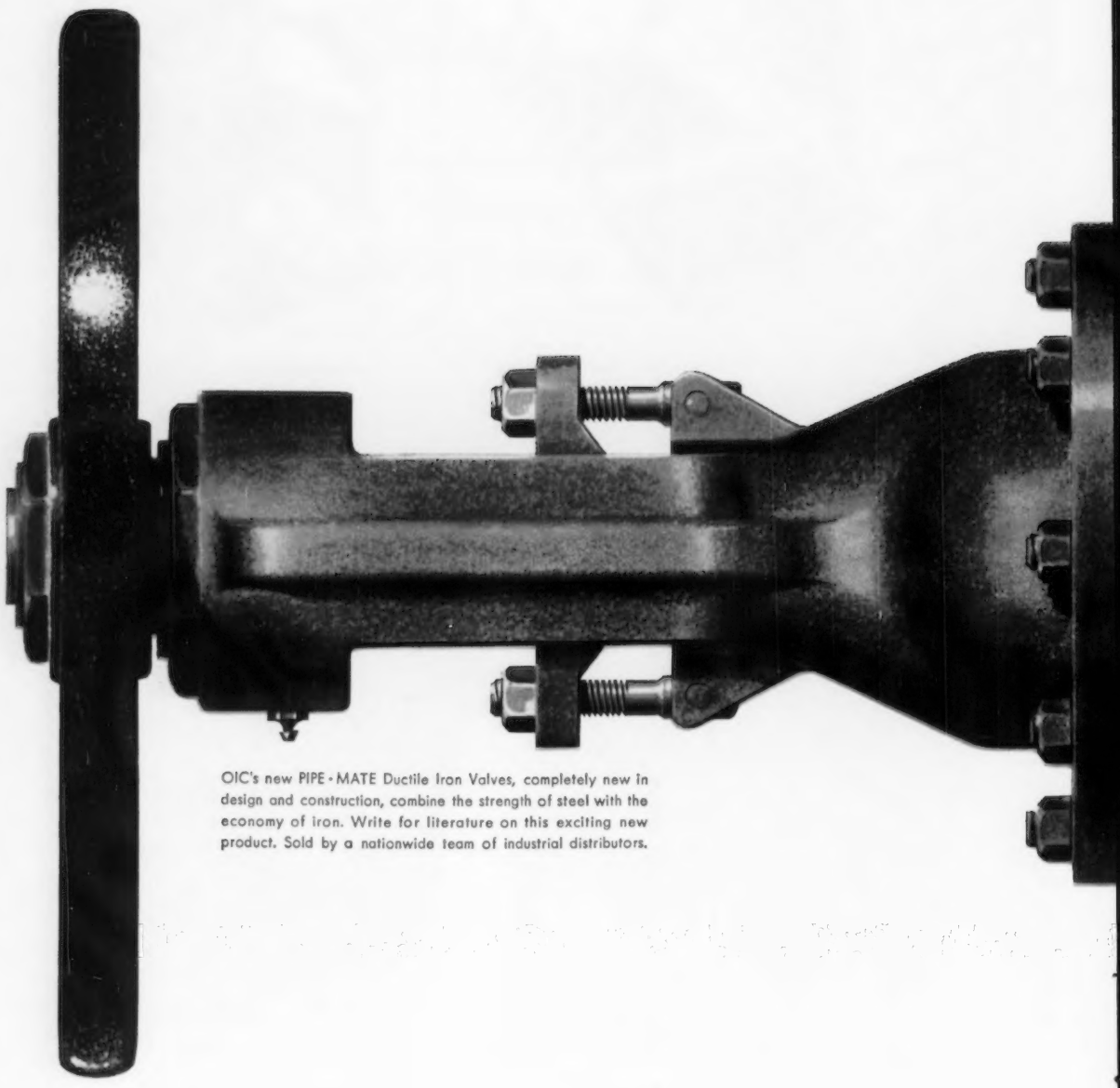
Write
MONSANTO CHEMICAL COMPANY
ORGANIC CHEMICALS DIVISION
DEPT. CB-1, ST. LOUIS 66, MO.

MORE NEW IDEAS!



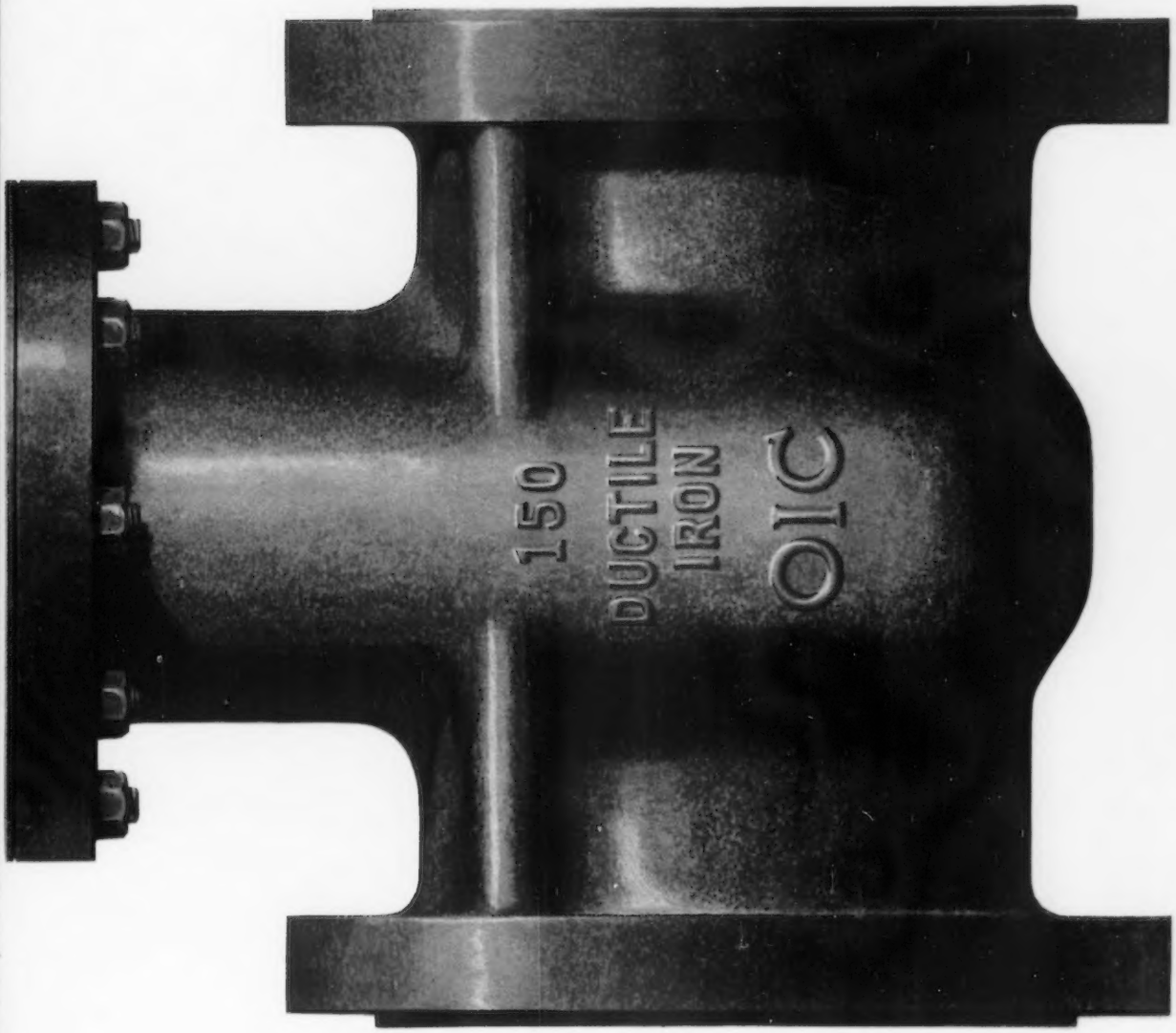
Like to know more about these new design ideas? Interested in other hard-sized paper specialties? Write Monsanto. We'll send you a list of mills who can furnish the stocks, and a copy of our new idea packed **DESIGN GUIDE FOR NEW PAPER PRODUCTS.**

LEADERSHIP is the sum of many things
. . . quality products, dependable service, integrity of



OIC's new PIPE-MATE Ductile Iron Valves, completely new in design and construction, combine the strength of steel with the economy of iron. Write for literature on this exciting new product. Sold by a nationwide team of industrial distributors.

LEADERSHIP is the sum of many things . . . quality products, dependable service, integrity of policy . . . but, most of all, eagerness to develop new ways of serving customers better. At OIC today you can almost feel that sense of leadership rising like a tide in many areas of our activities . . . the pride of workmanship in the plant . . . the vigorous sense of service among our people in the home office and in the field . . . a new

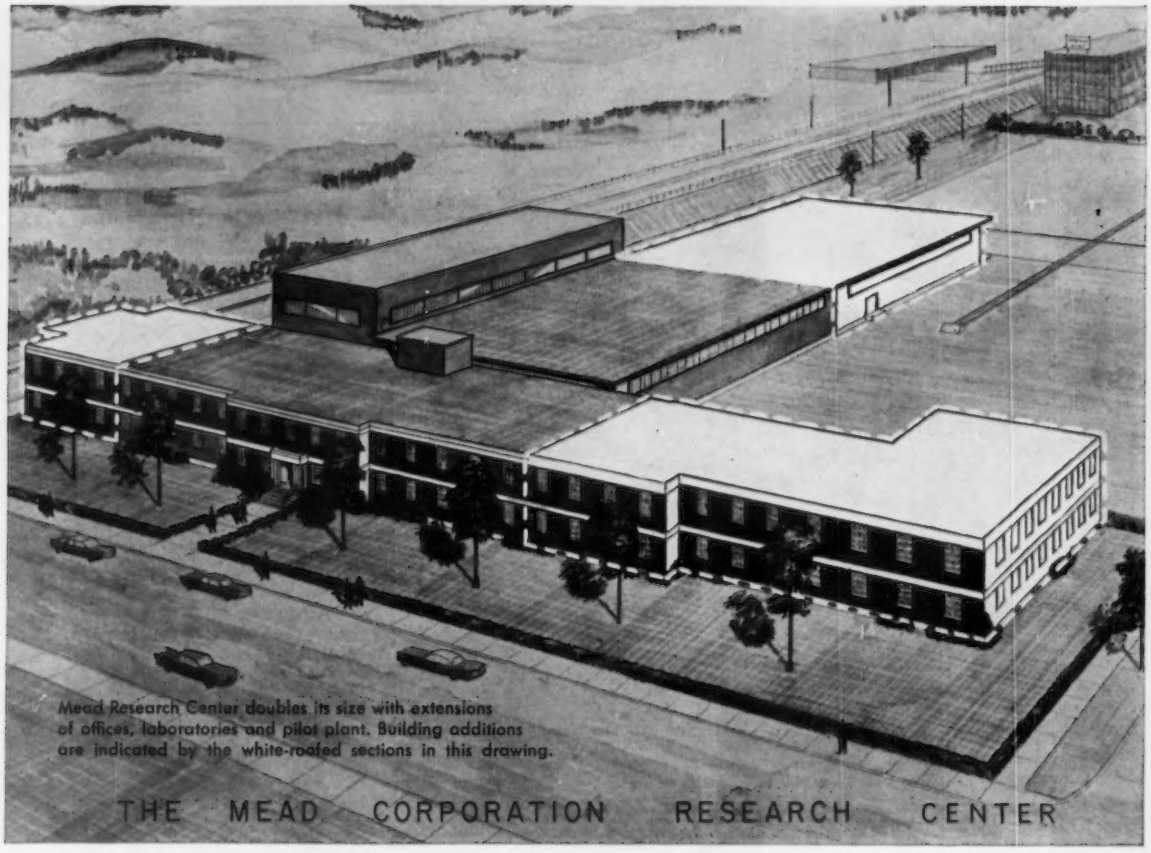


and youthful spirit in a company with more than 75 years of solid experience. Specifically, OIC has a new story to tell about valve marketing—one that has prompted many of our distributors and customers to tell us: "Now you're talking *our* language." Significant things are happening in our business. When can we tell you about them?

OIC VALVES | FORGED AND CAST STEEL, BRONZE, IRON AND DUCTILE IRON VALVES

THE OHIO INJECTOR COMPANY • WADSWORTH, OHIO

There is a place for you in this expanding Research Center



Mead Research Center doubles its size with extensions of offices, laboratories and pilot plant. Building additions are indicated by the white-roofed sections in this drawing.

As Mead doubles the laboratories, pilot plant and offices of its Research Center in Chillicothe, Ohio, we seek experienced men to fill out our growing research staff.

EXPERIENCED CHEMISTS, CHEMICAL ENGINEERS, PAPER CHEMISTS for the areas of:

Pulping and Bleaching—laboratory and pilot plant investigations.

Coating—development of methods, formulations, applications and improvements.

Paper Quality—improvement of physical properties of paper.

POLYMER RESEARCH CHEMISTS: A Ph.D. Chemist (polymer or physical) to conduct fundamental research. Investigations of the characteristics of cellulose and other polymeric materials used in papermaking.

MECHANICAL ENGINEERS: Experienced mechanical engineer to do development work through process improvement and design. Will concern himself with the extension of theoretical approaches into practical applications.

PRODUCT DEVELOPMENT AND IMPROVEMENT—A technical background with experience in plastics, resins, elastimers, latices, or paper is the basic requirement to fill the new positions in expanding Research and Development New Products Section. Add to this imagination, creativeness, product-mindedness and you describe the individual we are looking for.

Mead offers opportunity for recognition and growth with friendly working and living conditions. Location, Chillicothe, a pleasant town of 28,000 in Southern Ohio. Your inquiry with full resume will receive immediate, confidential attention. For further information, write: Technical Employment Supervisor, Industrial Relations Department

THE MEAD CORPORATION *Chillicothe, Ohio*

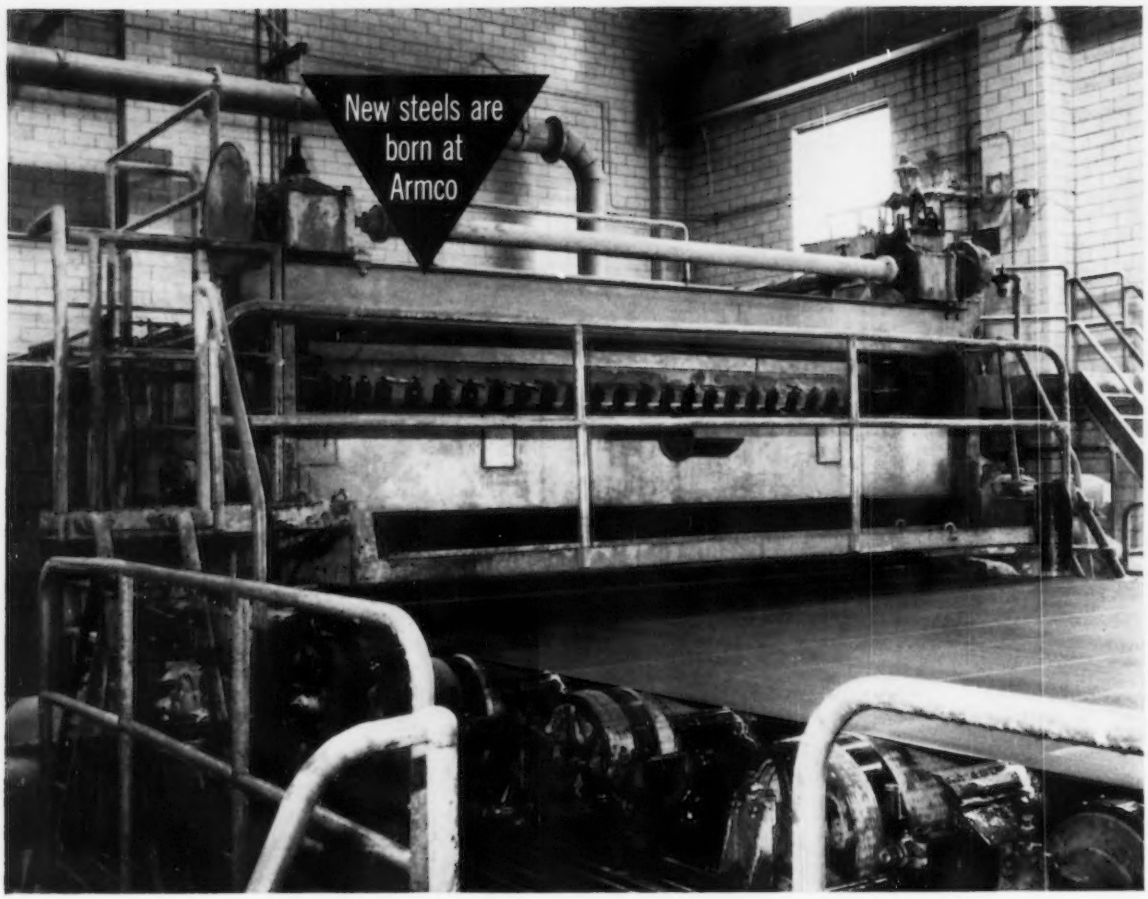
UNITANE® Titanium Dioxide

O-110 IS THE POSTMAN'S BEST FRIEND!

It takes a load off his shoulders . . . makes low basis weight papers more opaque . . . keeps publishers mailing costs down. Ask your Cyanamid Pigments representative about UNITANE O-110.

CYANAMID

AMERICAN CYANAMID COMPANY, Pigments Division
30 Rockefeller Plaza, New York 20, N. Y.
Branch Offices and Warehouses in Principal Cities



Besides Type 304 stainless steel rectifier rolls, the headbox itself is lined with stainless steel. Many other parts of the fourdrinier are also made of this special steel.

Stainless Steel Rectifier Rolls Last Longer, Perform Better

When a northern paper mill used carbon steel rectifier rolls coated with a non-metallic material, the coating usually began to come off in less than a year. The exposed steel soon corroded, causing some operating difficulties and costly replacements.

Changing to Type 304 stainless steel for the rolls not only solved these problems, but added still another important benefit. The extra strength and corrosion resistance of stainless steel permitted changing the design of the rolls for better and cleaner performance.

COSTS LESS, TOO

Next time corrosion shortens the life of any of your equipment, it will pay you to consider replacing it with stainless steel. Many mills are finding that longer service life, and lower maintenance make stainless steel the least expensive material for the job. Armco Steel Corporation, 3519 Curtis Street, Middletown, Ohio.

ARMCO STEEL

Armco Division • Sheffield Division • The National Supply Company • Armco Drainage & Metal Products, Inc. • The Armco International Corporation • Union Wire Rope Corporation

Trends

First Ten Months Paper and Board up 11.7%

Paper and board production for the first ten months of 1959, as estimated by APPA, totaled 28.6 million tons, an increase of 11.7% above the comparative ten-month period last year. Paper production was 12.4 million tons, an increase of 10.7%; paperboard production was 13.3 million tons, an increase of 12.2%, and construction paper and board production was 2.9 million tons, an increase of 14.0%.

Newsprint Consumption Records Continue

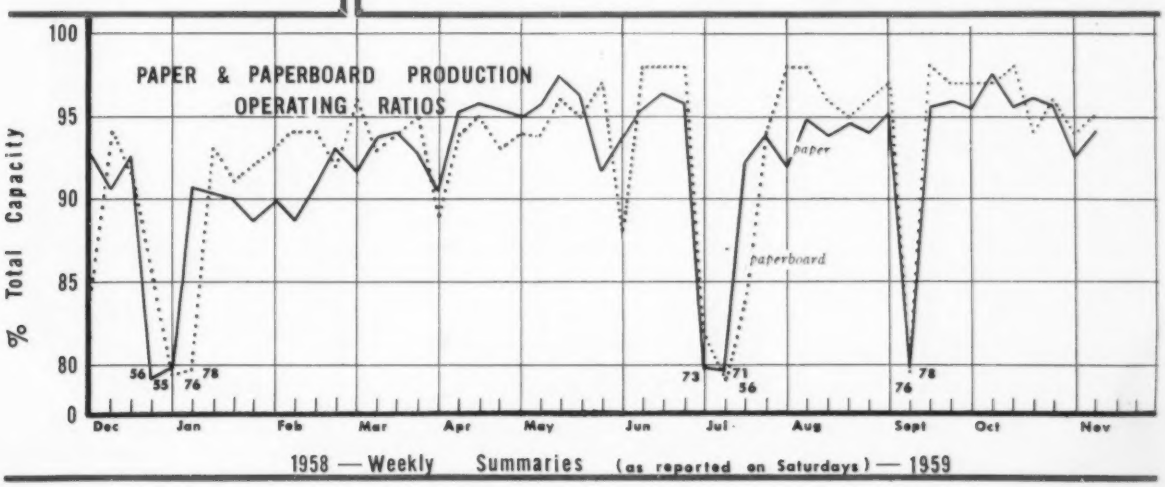
U. S. newsprint consumption continues to set new records, with a new October high and record high for the ten months. Newspapers reporting to the American Newspaper Publishers Ass'n. in October 1959 consumed 4.8% more than October 1958, and 5.8% over October 1957. Consumption in the first ten months was 7.1% over the first ten months of 1958 and 2.9% over the corresponding period of 1957.

Folding Box Output Slips in October

Dollar volume of folding cartons shipped during October dropped 0.6% from year-ago levels, the Folding Paper Box Ass'n. reports. At the same time tonnage was 3.6% below October of 1958. It was the second month this year that dollar volume has fallen behind the like period of 1958 and the third time that tonnage slipped. Because of the vigorous pace of business in the early part of the year, however, the 10-month cumulative volume for 1959 is still 3.4% ahead of the like period of last year and tonnage for 10 months is 2.1% ahead of 1958.

Pulp and Paper Output Details for September

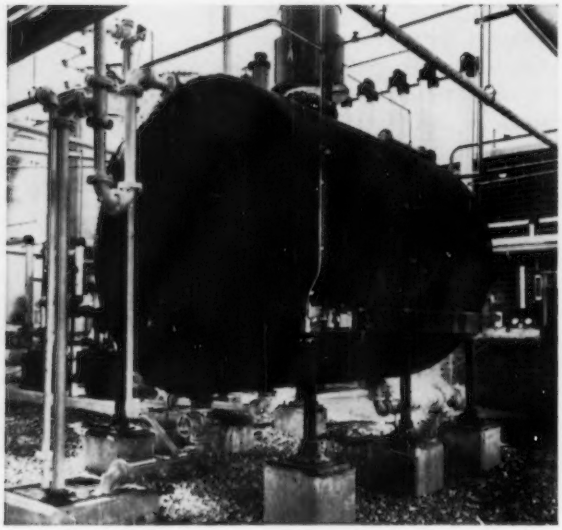
Paper and board production during September was 7% higher than September a year ago. Paper production was 8% above September 1958. Paperboard output was 6% above September 1958. Consumption of fibrous materials other than pulpwood, totaled 869,469 tons in September compared to 878,508 tons in August 1959. Consumption of waste paper amounted to 784,486 tons, as compared to the 785,185 tons consumed in September a year ago. Wood pulp consumption in the paper and board mills during September was 8% above that consumed in September 1958. Wood pulp production during September was 10% above that produced in September last.



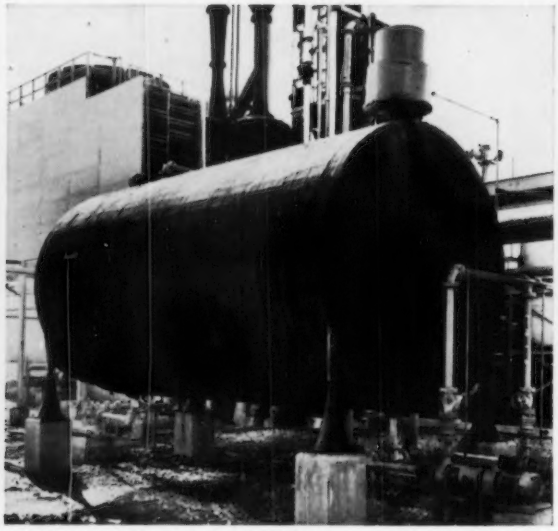
FLUIDICS

is a new PFAUDLER PERMUTIT program that provides a modern, imaginative approach for handling and processing more profitably the liquids and gases involved in such operations as:

corrosioneering	flow rate control	pumping	metering
water treatment	heat transfer	reactions	valving
waste treatment	fluid analysis	agitation	piping
		blending	storing



Waste liquors, highly corrosive, are accumulated in Glasteel at Marathon Southern in this 5000-gallon Glasteel Chemstor tank.



15,000-gallon storage tank of Glasteel construction keeps chlorine dioxide safe and pure until it's ready for use.

FLUIDICS AT WORK

How Marathon Southern uses Glasteel in chlorine dioxide generation

One of the major factors to consider in setting up a chlorine dioxide plant is the corrosiveness of chlorine dioxide itself and of the chemicals used to generate it.

Depending on the process you use, you run up against sodium chlorate, sulfuric acid, methanol, and sulfur dioxide.

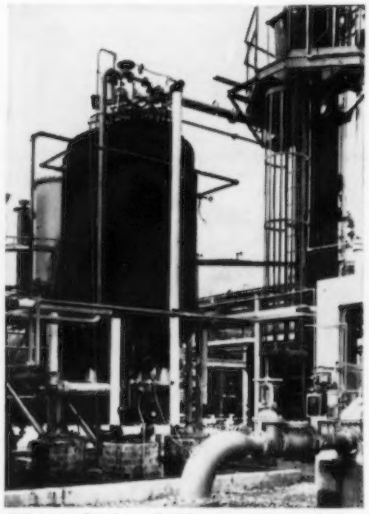
One construction material is completely resistant to all and any combination of these chemicals . . . Pfaudler Glasteel.

That's why you'll find Glasteel equipment so much in evidence at Marathon Southern's new chlorine dioxide plant. This single material from one fabricator solves *all* the corrosion problems encountered.

More than 35 pulp mills are now using Glasteel equipment for everything from generators to storage tanks and towers, from pumps and pipes to fittings and valves.

If you're considering a new chlorine dioxide plant or expanding or revamping an old one, take advantage of Glasteel, the modern material of construction for ClO_2 equipment, provided by our FLUIDICS program. You can get a complete analysis covering original prices, maintenance costs, and length of equipment life simply by contacting your Pfaudler representative.

Or write direct to our Pfaudler Division, Department PT-119, Rochester 3, New York.



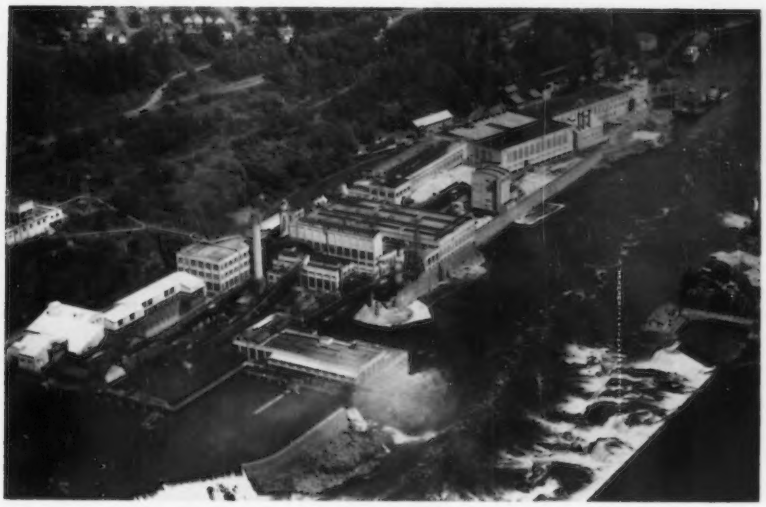
Primary chlorine dioxide generator at Marathon Southern. Five-ton-per-day capacity. Like most of the chlorine dioxide equipment at this installation, it's corrosion resistant Glasteel.

PFAUDLER PERMUTIT INC.

Specialists in FLUIDICS . . . the science of fluid processes

chipped and cooked into pulp by a

PJT PAPER TRADE JOURNAL
WEEK OF NOVEMBER 30, 1959



$4.5 Million Program at Crown Zellerbach West Linn Mill

Crown Zellerbach Corp., West Linn, Ore., division, has announced a $4½ million program to improve product quality and plant efficiency.

Blade coating equipment will be installed on West Linn's two publication grade paper machines to manufacture double-coated magazine and printing papers for four-color high speed presses. West Linn coated paper then will be similar to that produced at the company's new St. Francisville, La., mill. The blade coating equipment will be installed on No. Six machine in April and No. Five in June.

At that time the two paper machines will be equipped with Slushmakers, replacing the broke beaters.

New centrifugal screens are being installed in the groundwood mill. A 100-ton per day sodium-hydrosulphite bleaching unit will be added to improve the quality of certain grades of book papers manufactured at West Linn. This bleaching equipment will be in operation early next summer.

Included in the mill's scheduled 1960 improvements is the installation of a large disk refiner unit to make groundwood pulp from chips. This refiner will be powered by two 1000-horsepower electric motors. The largest unit of its kind ever built, the new refiner is expected to produce as much pulp as three grinders in the present groundwood mill. The new refiner is similar in principle but larger than an experimental unit in use at Crown Zellerbach's central research department in Camas.

Centrifugal cleaning equipment has been installed on the mill's three largest paper machines this year. A fourth machine will be similarly equipped by the end of 1959.

Facilities to unload and store purchased chips made from lumber and plywood leftovers are nearly completed on a two-acre site adjacent to the West Linn mill's filtering plant on the bluff overlooking the mill. An air pressure conveyor system will be used to blow chips from the storage site across the Williamette Locks and into the mill through an eight-inch steel pipe. The chip installation is expected to be in operation by December.

To provide additional electric power for these mill improvements a 12,000-kva highline transformer will be installed adjacent to the chip storage area. A new line will transmit the additional power across the canal and into the mill.

Crown Zellerbach's West Linn mill, which operates 10 paper machines, is Oregon's largest pulp and paper producer.

The mill provides year around employment for 1400 men and women and has an annual payroll in excess of $7⅓ million.

St. Regis Paper Files Suit to Block Use of Name by Another Firm

The St. Regis Paper Co. filed a suit November 20 in the Court of Chancery at Wilmington, Del., to block use of the name "St. Regis" by the St. Regis Corp., a Delaware-chartered corporation. The suit alleged that a great deal of confusion has arisen over the dual use of the name. The court was asked to enjoin the St. Regis Corp. from carrying on any business whatsoever under the name and that the plaintiff receive damages from the alleged unlawful acts.

The paper company contends it has been in business under the name of St. Regis since 1899, owns more than 3,000,000 acres of timberland, and markets paper, lumber and plastic products under the name.

The plaintiffs charge that the St. Regis Corp.'s stock is being sold over the counter at a cheap price compared to St. Regis Paper Co. stock listed on the New York exchange, that a product being promoted by the defendants gives the misleading impression it is connected with the paper company, and that all these acts have resulted in unlawful profit and good will for the defendants.

LTI AWARDS BROUGHTON PAPER SCHOLARSHIPS—Four Massachusetts students of paper engineering at Lowell Technological Institute have been awarded $100 scholarships, given by 12 paper companies in memory of Dr. Geoffrey R. Broughton, former LTI professor. Charles J. Higgins, paper engineering instructor (left), congratulates Ernest A. Tessier of Lowell, '61; John E. Sanderson of Dover, '62; and Frank Zichelle of Fitchburg, '60. The other scholarship recipient, not in photo, is Bernard Coyle of Salem, '61.

Sealright-Oswego Falls Acquires Full Interest in Canadian Concern

The Sealright-Oswego Falls Corp. of Fulton, N.Y., and the Nashua Corp. of Nashua, N. H., have announced that Sealright has purchased Nashua's interest in Canadian Sealright Co., Ltd., of Peterborough, Ont.

The two companies have shared a joint interest since 1926 in the Canadian concern, which manufactures both sanitary paper containers and closures.

S. J. Whitehouse has been elected president of the Canadian division. Mr. Whitehouse has been vice president and general manager of the Canadian company for some time and was the company's first salesman.

In the past few years, Canadian Sealright has introduced new products to Canada with outstanding success. Included are the Nestyle ice cream and moist food container and the plastic coated sanitary Sealon hood milk bottle closure now being adopted by a number of Canadian dairies.

Nashua Corp., manufacturer of paper specialty lines, will continue its operations in Canada through its wholly owned subsidiary, Nashua Canada, Ltd., operating its own plant in Peterborough.

Finch, Pruyn Adding Another NSSC Digester

The beneficial effect of a pulp mill on the economy of its immediate neighborhood is illustrated by the experience of the Glens Falls, N. Y., area with the advent of Finch, Pruyn and Co.'s neutral sulphite pulp mill. Since 1957, when construction of the pulp mill was completed, Finch, Pruyn has been using about 32,000 rough cords of birch, beech, maple and oak hardwoods each year, and approximately 80 per cent of this is purchased locally from farmers and woodlot owners.

When Finch, Pruyn planned the construction of the new pulp mill, a resource survey disclosed that there was a hardwood potential within a 50-mile radius of the plant to sustain such an operation indefinitely. On this assurance of an abundant supply of these northern hardwoods, the company made its decision to build the plant.

Since the neutral sulphite mill has been in production, Finch, Pruyn has paid approximately $640,000 a year to local hardwood producers. The wood is delivered by privately owned trucks to the mill where it is barked, chipped and cooked into pulp by a chemical process in a large digester. The pulp is used in the manufacture of a new grade of 100 per cent chemical paper marketed under the trade name "Finch." It is also combined with mechanical pulp in the company's other lines of papers including "Cooper's Cave" and "Impact."

The demand for Finch, Pruyn papers has resulted in the need for an additional digester at the neutral sulphite pulp plant. The installation is expected to be completed by the middle of next year, increasing capacity by 75 per cent. It is estimated that the company's total hardwood consumption at that time will be 52,000 cords a year or 1,000 cords a week.

Fire Causes $150,000 Damage at Oxford Paper

Fire in the electrical system in the basement of the North Star Coater building of the Oxford Paper Co., Rumford, Me., caused damage which preliminary estimates indicate will be approximately $150,000.

There was no damage to the coater itself. All other machines and equipment in the mill are running full schedule and were not affected by the fire.

New Paper Machine for Romar Tissue

Romar Tissue Co., Wheelwright, Mass., is installing a high speed tissue machine. The new machine which will have a 96-inch trim is being supplied by Sandy Hill Iron & Brass.

Paper and Paper Board Production

The American Paper and Pulp Association reported the ratio of the United States paper production to mill capacity for the week ending November 14, 1959, at 94.1 per cent, compared with 95.6 per cent, revised for the preceding week. The ratio was 91.2 per cent for the corresponding week a year ago.

The National Paperboard Association reported the paperboard production ratio for the week ending November 14, 1959, at 95 per cent, compared with 94 per cent for the preceding week and 93 per cent for the corresponding week a year ago. *(Detailed statistics on page 40)*

Top Execs. at Weyerhaeuser Exchange Positions

Weyerhaeuser Co. announced changes in its officers to be effective February 1, 1960. Norton Clapp of Seattle, well-known Pacific Northwest business leader, has been elected president succeeding F. K. Weyerhaeuser who will become chairman of the board.

Mr. Clapp, chairman of the board since March 1957, was elected after Mr. Weyerhaeuser announced his retirement as president effective February 1.

Mr. Weyerhaeuser has been president of the company since December 1956, at which time he succeeded his brother, J. P. Weyerhaeuser, Jr., after the latter's death. F. K. Weyerhaeuser served as chairman of the board from March 1955, until taking over the presidency in 1956.

Mr. Clapp joined Weyerhaeuser's board of directors in 1946. He was named vice president and a member of the board's executive committee in March 1955.

PORTABLE EXHIBIT on the papermaking process, developed by the Information Service, Wisconsin Paper Industry, 104 N. Commercial Street, Neenah, as a training aid, speechmaking prop and public relations tool for those in the paper business. Exhibit is easily transported, vividly colored, has more than a dozen animated models and operates simply on 110-volt current.

Strikers Return to Work At Monroe Plant

Crews started work at the Consolidated Paper Co., Monroe, Ohio, on November 14, to prepare the plant for resumption of production following ratification of an agreement ending a three-month strike.

Some 1,200 of the 1,625 employees of the three Monroe plants met for more than two hours to ratify the agreement, with only 11 "no" votes.

Following the session, presidents of the three unions met with C. H. R. Johnson, company president, to sign a new contract.

October '59 Newsprint Output Tops 1958

Production of newsprint in North America during October 1959 amounted to 770,506 tons—an all-time high for any month on record—and was 10.2 per cent above the October 1958 volume. Shipments totaled 782,030 tons in October 1959 and were 9.5 per cent greater than shipments in the comparable month of 1958. According to the Newsprint Service Bureau, output in the United States of 177,325 tons represented the largest volume of any month in history while shipments totaled 179,472 tons, and respective gains over October 1958 amounted to 14.6 per cent and 13.1 per cent. Canadian production of 593,181 tons exceeded that of any previous month while shipments totaled 602,558 tons, which represents increases from October 1958 of 9.0 per cent and 8.5 per cent respectively.

Production of newsprint in North America in the first ten months of 1959 amounted to 6,920,347 tons, which was 358,594 tons or 5.5 per cent above the level attained in the same period of 1958. Cumulative output of United States mills at the end of October 1959 totaled 1,627,948 tons—an all-time high for this period—and was 167,416 tons or 11.5 per cent more than the volume produced a year earlier. Canadian production amounted to 5,292,399 tons and was 191,178 tons or 3.7 per cent greater than in the first ten months of 1958.

Falls Paper Converting Sulphite Mill to Ammonia Base

Falls Paper & Power Co. (wholly owned subsidiary of Scott Paper Co.) is converting its sulphite pulp mill from calcium to ammonia base. The change-over will permit pulping of wood species which it is not possible to use at present. Also some improvement in pulp quality is anticipated.

The improvement program was carried out in three steps. The first step was installation of unloading and storage facilities for the ammonia. Next step was the modification of the Paulson tower and acid-making equipment to make ammonia base cooking acid. Installation of a heat exchanger, provision for a new well to insure adequate water supply and elimination of bronze fittings in the acid system were also required. Instrumentation for control of the acid making process was also installed.

The third step will require several months for completion. This involves the relining of digesters and accumulator. A special double brick lining with an acid resistant membrane between the bricks is required for digester protection in the ammonia base process.

This will be the third Scott mill to convert to ammonia base. The other two are Soundview and Anacortes, both in Washington.

Aco Machinery Buys Mill at Norfolk, N. Y.

The St. Lawrence Paper Co. mill at Norfolk, N. Y., which was shut down November 14, was sold November 16 by the Knight Newspaper Syndicate, Akron, Ohio, to the Aco Machinery Corp., Watertown. Abe Cooper, industrialist, is president.

The mill, which was founded in 1901, has been making ground wood printing paper; 105 tons daily. Most of the production was used for newsprint by the Knight newspaper interests. The Knight firm operates newspapers in Miami, Fla.; Detroit, Mich.; Akron and Charlotte, N. C.

PAPER PEOPLE

D. W. Timmis

V. J. Sutton

Bowaters Southern Announces Promotions

Two officials of Bowaters Southern Paper Corp. have been appointed to important new positions.

D. W. Timmis, first vice president at Calhoun, will become managing director of the Tasman Pulp and Paper Co., Ltd., of New Zealand effective January 1.

V. J. Sutton, vice president—operations of Bowaters Southern, will become vice president and general manager of the Tennessee company. Mr. Sutton will also succeed Mr. Timmis in the latter's post as vice president of Bowaters Carolina Corp., Catawba, S. C.

The Bowater Paper Corp., Ltd., London, England, recently acquired a financial interest in the New Zealand company and, in conjunction with Albert E. Reed & Co., Ltd., will be responsible for the management of its operations and will also furnish technical direction for the New Zealand mill. A second paper machine is to be added as part of a new development program. Bowaters Australian sales company has been appointed as the sole selling agents for the products of the Tasman company.

St. Regis Promotes Two On European Staff

Edgar B. Hoppe has been appointed director of European operations for St. Regis Paper Co., effective November 15, 1959. Mr. Hoppe has been European manager since 1940. He joined Bates Valve Bag Co. in December 1924 as assistant to the European manager and, in 1930, was made European manager of Bates International Bag Co. When Bates was acquired by St. Regis, Mr. Hoppe joined St. Regis.

Andre Terlinden will succeed Mr. Hoppe as European manager. Mr. Terlinden, who was assistant European manager, has been with St. Regis for 14 years.

Messrs. Hoppe and Terlinden will make their headquarters in Brussels, Belgium, and will continue to report to the International Division in New York.

C-Z Announces Personnel Changes at Camas Mill

Crown Zellerbach Corp. has announced two personnel changes at its Camas, Wash., mill.

Warren MacGregor, research chemist, becomes process chemistry supervisor.

Leonard Lucas joins the central research staff as associate chemist, central research. Mr. Lucas previously worked as a chemist at the Charlton Laboratories, Portland.

Gilman Paper Announces Sales Staff Promotions

Dean Wellington, assistant general sales manager of Gilman Paper Co., announces three promotions from the ranks of the sales staff, effective immediately.

Stan L. Kaufman has been named sales manager for the Metropolitan New York area which he covered for Gilman prior to this promotion.

Tom E. Morris has been appointed sales manager for the Southeast area, which was his territory since joining Gilman in November 1956. He will operate out of Charlotte, N. C.

Robert E. Bringman, for over two years in charge of pulp sales, has been made sales manager of Specialty Papers division.

Hammermill Names Bailey Oswego Operations Supt.

Appointment of George W. Bailey as superintendent of operations at Hammermill Paper Co.'s Oswego Division has been announced. At the same time two related assignments in the paper mill and one in the power division at the Erie mill were announced.

Mr. Bailey, in his new position, will be responsible for all manufacturing operations at Hammermill's soon-to-be, new Oswego Division. As announced earlier this year, Hammermill will take title and possession of the Oswego, N. Y., paper mill from Marathon, a division of American Can Co., on February 1, 1961. As soon thereafter as conversion operations can be completed, the 30,000-tons-per-year paper machine will begin producing Hammermill papers.

In preparation for his new assignment, Mr. Bailey is embarking on an extensive administrative training program at Erie and elsewhere prior to moving to Oswego next fall. He joined the Hammermill organization in 1933—and was appointed a machine tender in 1951, paper mill foreman in 1955 and general foreman in 1956.

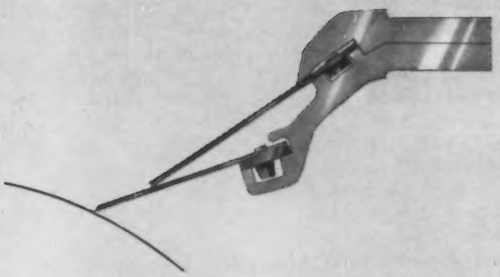
In the three Erie Division appointments, Donald C. Sanner and Leonard W. Kleiman have moved up to general foreman and foreman respectively in the paper mill, while Robert K. Fessenden has been promoted to supervisor in the power division.

Barrett Appoints Gatewood To Top Sales Post

Appointment of Wesley E. Gatewood as director of field sales for the Barrett Division of Allied Chemical Corp. has been announced.

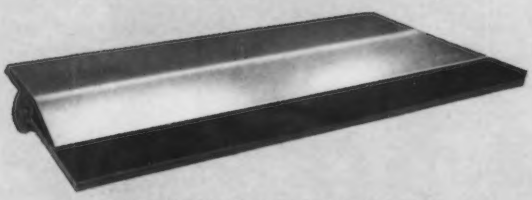
Mr. Gatewood joined Barrett in February as director of sales training and promotion after 12 years with Armstrong Cork Co., where he last served as assistant sales manager of the Philadelphia District.

SMALL INVESTMENT . . . BIG RETURN

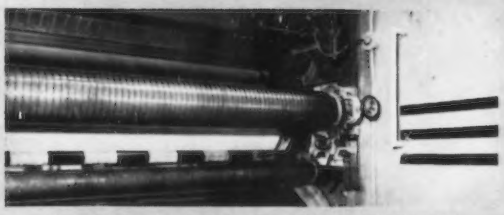


VICKERY HI-ANGLE DOCTORS

VICKERY HI-FLEX DOCTORS



VICKERY RS TYPE DOCTORS



VICKERY MOTOR OR HYDRAULICALLY OSCILLATED DOCTORS

VICKERY AIR LIFT

One sure way to reduce rejects and breaks is to put properly engineered, properly applied Vickery Doctors on every machine and calender roll.

Rolls differ in size, composition, and temperature as well as function. That is why there are a dozen different designs of Vickery Doctors and why each application is carefully engineered to fit the roll, the job, and the condition under which it operates.

Why not take advantage of our unequalled doctor, engineering, and application experience.

BIRD MACHINE COMPANY

SOUTH WALPOLE, MASS.
REGIONAL OFFICES: EVANSTON, ILLINOIS
PORTLAND, OREGON • ATLANTA 9, GEORGIA
Canadian Manufacturers of Bird Machinery
CANADIAN INGERSOLL-RAND COMPANY, Limited, Montreal

BIRD MACHINE'S 50th YEAR OF SERVICE TO INDUSTRY

Mason Steps Up At Allied's King Mill

Promotion of Claude Mason to the position of King mill conversion supervisor has been announced by King mill manager, A. Mulder.

An employee of the Allied Paper Corp. and the King mill since 1942, the new conversion supervisor formerly held the positions of head washerman and conversion foreman prior to his promotion.

International Promotes Six In Southern Kraft Div.

Six promotions within the Southern Kraft Division of International Paper Co., Mobile Ala., including the appointment of two mill managers, have been announced.

Promoted are Arthur F. Perkins, from manager of the Mobile mill to assistant to the general manager, in charge of engineering and construction; Arthur P. Foster, from assistant chief engineer to chief engineer of the Southern Kraft Division; Eugene E. Ellis, Jr., from manager of the company's Natchez, Miss., mill to manager of the Mobile mill; and James M. Van Hoose, from assistant mill manager of the Camden, Ark., mill to manager of the Natchez mill.

Simultaneously two production superintendents were promoted to assistant mill managers. They are: for the Mobile mill, Varnado Williams; and for the Natchez mill, Emmett R. Jones.

Mr. Perkins has been manager of the company's Mobile mill since January 1959. He is a graduate electrical engineer of the Georgia Institute of Technology and has served in various capacities at International's mills in Georgetown, S. C., and Bastrop and Springhill, La., since joining the company in 1935. He was appointed assistant mill manager of the Mobile mill in 1955.

Mr. Foster has been assistant chief engineer for the Southern Kraft Division since November 1954. He first joined International Paper in 1933 as a pulp and paper tester in Rumford, Me., after being graduated from Mississippi State College in mechanical engineering and from the University of Maine's course in paper technology.

A native of Yazoo City, Miss., and a graduate of Louisiana State University, Mr. Ellis joined International in 1937 and has served in various operational and engineering capacities at six of the company's ten Southern mills. Before being made manager of the Natchez mill, he was production superintendent there.

Mr. Van Hoose, from McIntosh, Ala., is a graduate of Alabama Polytechnic Institute in Auburn. He began his career with International at the Moss Point, Miss., mill in 1936. He was a construction engineer during the building of the Natchez mill in 1949, and remained at Natchez for six years as technical director and U. M. & E. superintendent.

Varnado Williams, a veteran of 29 years with International Paper Co., has been production superintendent of both the Mobile and Springhill mills and was assistant mill manager of the Springhill mill in 1955-56.

Emmett R. Jones joined International in 1934. Advancing through numerous supervisory positions at various International mills, he was named production superintendent of the Natchez mill in 1955.

G. T. Ward

International Paper Ups Ward To Exec. Staff

Promotion of George T. Ward, a vice president of International Paper Co. since 1958, to the company executive staff in New York has been announced.

Mr. Ward, who has served as vice president of the company and chief engineer of the Southern Kraft Division with headquarters in Mobile, Ala., will assist Lamar M. Fearing, executive vice president of the company, with all matters pertaining to the operation of the Southern Kraft Division.

After joining International Paper in 1930 as an engineer, Mr. Ward served in various engineering and operating capacities at several of the company's Southern mills and was named assistant engineer of the Southern Division in 1944. Appointed chief engineer the following year; Mr. Ward, in this post, supervised the company's major program of mill modernization and expansion carried on since the end of World War II.

C-Z Canada Announces New Appointments

Appointment of David Adirim as purchasing agent, Crown Zellerbach Canada, Ltd., is announced. Mr. Adirim succeeds Fred Oxenbury, Sr., who has been named special assistant to T. A. A. Fraser, secretary of Crown Zellerbach Canada.

Mr. Adirim first joined the company in 1941, as assistant purchasing agent of the Canadian Western lumber division.

Mr. Oxenbury has been with the company for 32 years. He joined Crown Zellerbach Canada's Ocean Falls division in 1927 and has been purchasing agent since 1955. In his new position he will be handling special assignments for the secretary.

Champion Reorganizes Engineering Department

In line with the reorganization of Champion Paper and Fibre Co.'s entire engineering department, a number of assignments have been announced.

Engineers include Francis E. Moench, Robert C. Pelle, Russell L. Riley, and Thomas L. Vogt. Named to the position of project scheduler is Harry G. Grieselhuber.

Mr. Moenck first became associated with Champion in 1953. He was employed as a co-op student. While working toward his civil engineering degree at the University of Cincinnati, he worked part time in Champion's production departments. He graduated with a civil engineering degree from UC in 1958.

Mr. Pelle is well experienced in the engineering field. He has studied engineering at Ohio State University, the University of Cincinnati, Purdue University, Northwestern University and Cornell University. He holds a BSME degree in mechanical engineering.

Mr. Riley has attended Miami University and the University of Cincinnati where he studied business administration and mechanical engineering.

Mr. Vogt has worked at Champion since 1953. A co-op student, Mr. Vogt gained experience in various departments. He is a 1957 graduate of the University of Cincinnati where he earned an electrical engineering degree. Presently, Mr. Vogt is working toward his B.S. degree in mechanical engineering at UC.

Mr. Grieselhuber from the University of Dayton, graduated in 1957 with a mechanical engineering de-

(Continued on page 19)

The Beloit Album

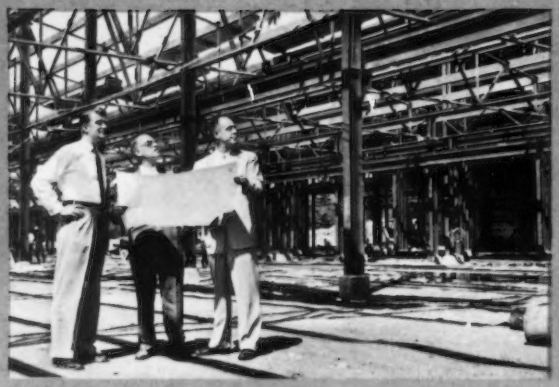
NOVEMBER, 1959

TWO PAST PRESIDENTS OF TAPPI recently visited Beloit: G. W. E. Nicholson *(left)* president, Tennessee River Pulp and Paper Co., and K. O. Elderkin *(right)* president, Bowaters Engineering and Development Inc. They are pictured with Beloit's chairman, E. H. Neese. Past, present, and future papermaking techniques were among the topics discussed.

MINNESOTA AND ONTARIO PAPER COMPANY's paper machine superintendent, L. A. Evenson (*l*) and general superintendent, paper, N. L. Jurgensen, hold a discussion beside the new Beloit 158" publication grade machine at International Falls, Minnesota.

THE CRYSTAL TISSUE COMPANY's vice president, manufacturing, John Burdsall (*c*) discusses slice assembly on erecting floor with Fay Mills (*l*) and Pete Jerardi, Beloit's Ohio representative.

THAMES BOARD MILLS LTD.'s William King (*c*) and S. J. Wright (*r*) visited Beloit during their recent American tour. Beloit's E.N. Glauner, Jr. reviewed suction roll packing arrangements with them.



CONSTRUCTION PROGRESS at Pittsfield is reviewed in one of the machine shop bays by Jones Corp. executives: *(l to r)* William Sorenson (Beloit) plant engineer, Dwight Jones, executive v. p., D. W. Curtis, assistant to president.

ROOF TRUSSES frame steelworkers on the new plant scheduled for occupancy in 1960. Shop and erecting bays are high and wide for greatest efficiency. Modern system of fluorescent lighting will illuminate windowless shops.

E. D. JONES CORP., Pittsfield, Massachusetts, adds new products, facilities to "the Beloit Group"

"Turn-key" mills—complete from pulping to finished sets—were made available to Beloit customers last year when E. D. Jones Corp., Pittsfield, Mass., became a member of the Beloit Group. The Jones line of pulp and stock-preparation equipment, in wide use throughout the papermaking world, is now offered in conjunction with the high-speed, high-production paper machinery with which Beloit has equipped leading mills for over a century.

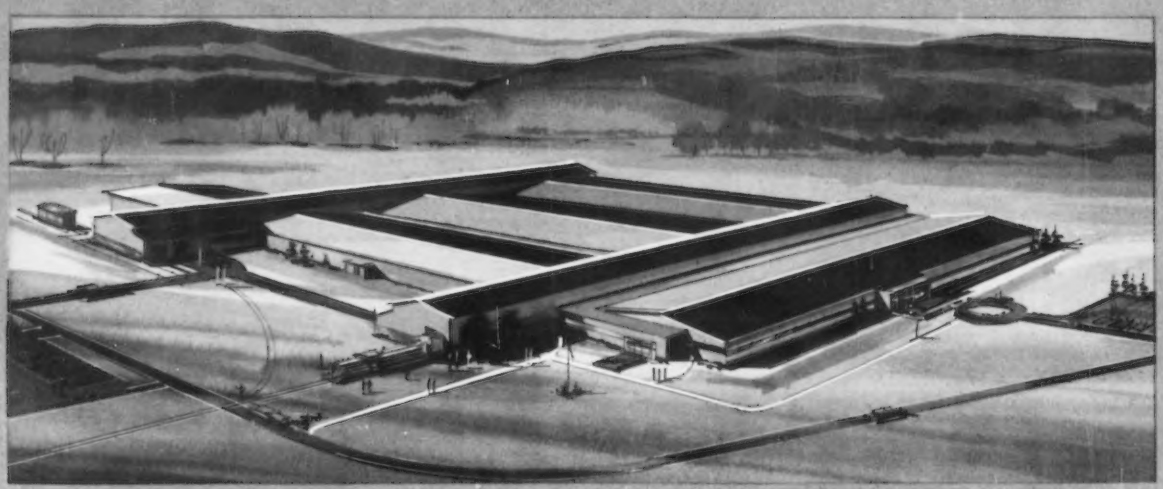
The Jones organization, founded in 1845, is one of the few industrial concerns in the U. S. which has been in continuous operation by the same family for more than 100 years.

Completion of the modern plant at Pittsfield, scheduled for occupancy early in the first quarter of 1960, will double present Jones manufacturing facilities and is expected to quadruple production capacity. Plant area has been engineered to permit future expansion up to 640,000 square feet. Correlated activity of the Beloit and Jones organizations makes the Beloit Group more effective than ever as "your partner in papermaking."

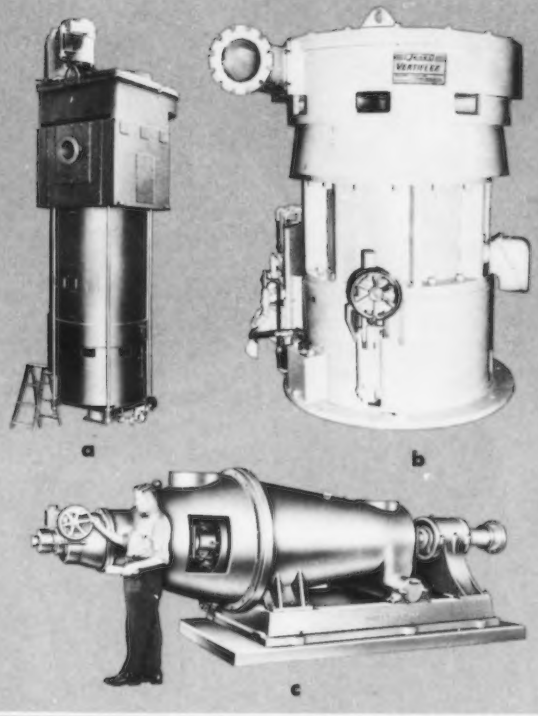
* * *

Jones Pulp Mill equipment: Vertiflex chip shredders and primary refiners—Condi continuous digestion systems for all types of pulp—Zenith dewatering presses—Berkshire hot stock refiners—Condi asphalt dispersion systems.

Jones Stock Preparation equipment: Hi-Lo, Pulpmaster, Liebeck and Turboflex pulpers—Jones high-production beating units and washers—Midget, #1, Stockmaster, Fibremaster, Royal, Imperial, Majestic and Leviathan jordans—Berkshire hi-angle conical refiners—Double-D and Vertiflex disc refiners—Jones vacuum and flotation savealls—custom-designed stock chests and agitators.

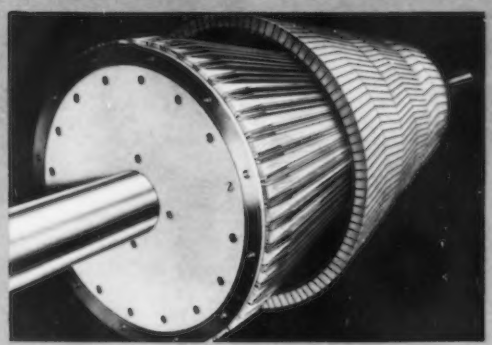


200,000 SQ FT will be available in E. D. Jones Corp. plant now under construction at Pittsfield. Fabricating and machine shops connect erecting floor *(l)* with receiving and storage bay *(r)*. Plant has complete rail and truck shipping-receiving facilities. Switch tracks lead directly to main line of New York Central railroad. Massachusetts Turnpike is only a few miles away.



a b c

Extensive Jones line of pulp mill equipment and stock preparation machinery includes: **a**, Zenith 020 dewatering press with floating cone; **b**, Vertiflex single disc refiner for chip shredding and primary defibering; **c**, Leviathan Jordan; **d**, Jones "Adapta-Plug" and "Fulbar" one-piece shell filling.



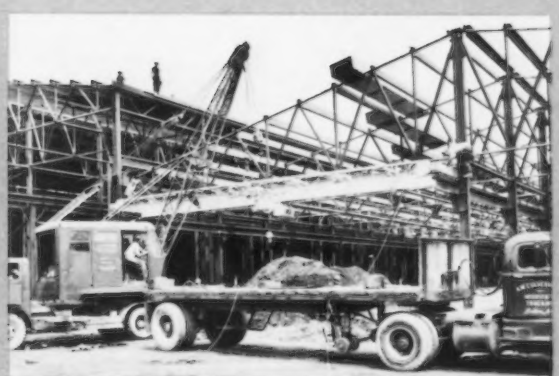
d

E. D. JONES CORP. PITTSFIELD, MASS. — BELOIT group

Jones

PULP MILL EQUIPMENT AND STOCK PREPARATION MACHINERY

NEARLY COMPLETED HEAVY MACHINE SHOP, with erecting floor footings appearing in the foreground.



BRIDGE CRANE is eased into position in light machine shop. Crane is one of 15 being installed to serve shops.

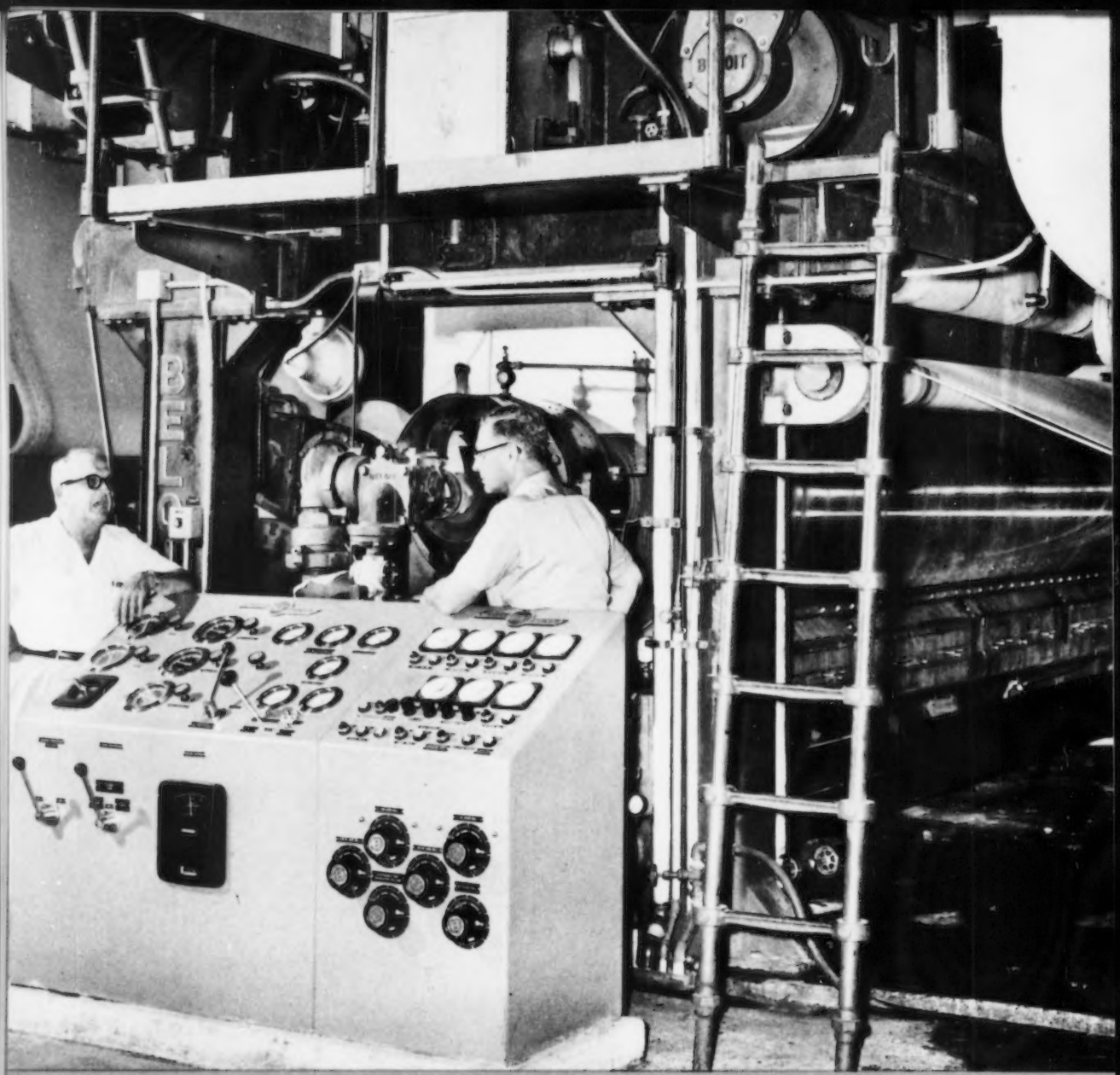
SHIPPING AREA at end of erecting floor takes shape as workmen pour forms. Woodshop will be located to the left.

your partner in papermaking

BELOIT

PAPER MACHINERY

BELOIT IRON WORKS — PAPER MACHINERY — BELOIT, WIS., U.S.A.



S. R. Christensen.

EXTENSIBLE UNIT, recently installed on #1 machine at International Paper Company's Southern Kraft Division Mill at Camden, Arkansas, produces the dramatic new CLUPAK* papers. Camden mill manager Albert Rozyskie (*l*) and paper mill superintendent R. M. Miles, are shown at the unit's control console. CLUPAK, Inc. has appointed Beloit to build extensible units under patents owned by CLUPAK, Inc. Several highly successful commercial installations have been made; additional units are on order. The patented process whereby CLUPAK paper is made brings a new dimension to paper-engineered stress and strain properties. While the process to date has been limited to kraft, principles of manufacture and characteristics are applicable to all grades.

*CLUPAK, Inc.'s trade-mark for extensible paper manufactured under its authority.

your partner in papermaking

BELOIT IRON WORKS PAPER MACHINERY BELOIT, WIS. U.S.A.

WHEN YOU BUY BELOIT . . . YOU BUY MORE THAN A MACHINE

BELOIT

PAPER MACHINERY

Printed in U. S. A.

PAPER PEOPLE

(Continued from page 18)

gree. He is now working on his industrial engineering degree at the University of Dayton.

Harry L. Symes is general supervisor of the storeroom section. Everett L. Potts is assistant general supervisor of the storeroom section, while Hubert McIntosh has been reassigned as sub foreman of the storeroom.

Elmer J. Ebel will head up the construction section as general foreman. Raymond Brockman is foreman of the construction section.

Stoddard F. Hayden is fire marshal and heads up the fire prevention and control section at Champion. James T. Farris will serve as foreman of the fire prevention and control section.

Mr. Symmes joined Champion in 1918. He has been connected with the storeroom section the entire time.

Mr. Potts started at Champion in 1930. He has served in the storeroom section as a sub foreman and as assistant general supervisor since 1951.

Mr. McIntosh, joined Champion in 1945 as a scales clerk. In 1957 he was named sub foreman of the storeroom.

Employed at Champion in 1930, Mr. Ebel first worked in the calender room. For the last 10 years he has worked in construction and has served as supervisor for the last eight years.

Mr. Brockman was employed at Champion in 1950. In 1954 he was named assistant foreman of the construction department.

Mr. Hayden came to Champion in 1956. Well experienced in fire control and prevention, Mr. Hayden has broad experience in his field. He attended Northeastern University at Boston, Mass.

Mr. Farris has been at Champion since 1936.

Named general foremen of shift supervision in the field maintenance section are: Jacob Newman, Charles Paullin, and Albert Wiseman. Assigned as foremen of the major projects and area relief section of field maintenance are: Albert Dickerscheid, Clarence Gibson and Charles Little.

Mr. Newman was first employed at Champion in 1933 as an electrician.

A Champion employe since 1942, Mr. Paullin also has wide experience in the electrical field.

Mr. Wiseman has been at Champion since 1933. His experience includes two years as a Number Two mill rewinder helper and 22 years as an electrician.

First employed at Champion in 1937, Mr. Dickerscheid transferred in 1945 to the sheet metal department.

A Champion employe since 1946, Mr. Gibson has gained experience in the unloading department and the pipe shop.

Mr. Little joined Champion in 1944 in the unloading department.

Consolidated Announces Executive Changes

C. H. R. Johnson, president & general manager, Consolidated Paper Co., Monroe, Mich., has announced the appointment of T. J. Lopatka as assistant to the president in charge of industrial relations.

Mr. Lopatka is a graduate of DePaul College of Liberal Arts & Sciences, DePaul College of Law, and has taken special studies in industrial management at Northwestern University. He was formerly employed by the Diamond T Motor Truck Co., Chicago, Ill. Starting as director of personnel, he became director of industrial relations in 1948, works manager in 1953, and vice president in charge of manufacturing and production in 1957.

Mr. Johnson also announced the promotion of Ervin Fulkerson to manager of the Consolidated Trucking Division. Consolidated maintains a "Warehouse on Wheels" consisting of 78 bright yellow trailers ranging in size from 10 to 18 tons.

Mr. Fulkerson has been with the Consolidated Paper Co. since 1934 as head of the personnel department. Super service to Consolidated Paper Co. customers is a very important sales item which Mr. Fulkerson will manage and promote.

TAPPI Selects 1960 Medal Award Winner

L. E. Wise

The Executive Committee has unanimously selected L. E. Wise, Institute of Paper Chemistry, Appleton, Wis., as the recipient of the 1960 TAPPI Medal. The presentation will be made at the 45th Annual Meeting to be held in New York on February 22-25, 1960.

Louis Elsberg Wise was born on January 29, 1888, in New York City. His formal education was obtained at Columbia University where he graduated in 1907 with an A.B. degree and membership in Phi Beta Kappa. In 1911 a Ph.D. degree was conferred upon him: his Doctor's thesis was carried out under the direction of Marston Taylor Bogart, and he was elected to Sigma Xi.

In 1919 he was appointed to the post of Professor of Forest Chemistry and Head of the Department of Forest Chemistry at The New York State College of Forestry at Syracuse.

In the course of his duties, Professor Wise was instrumental in activating the Department of Pulp and Papermaking at the New York State College of Forestry together with his colleague, Clarence E. Libby, and contributed much to the development of this department and in the training of many men destined for the pulp and paper industry.

Illness suddenly forced his retirement in 1932. He located in Winter Park, Fla., and began a period of convalescence. He was appointed Professor of Organic Chemistry at Rollins College in Winter Park from 1933 to 1937 on a limited schedule. In 1941, Professor Wise became Research Associate Wise at The Institute of Paper Chemistry in Appleton. In 1957 he was made Senior Research Associate, a position he holds at the present time.

In addition to his many educational contributions to the pulp and paper industry, Dr. Wise has published more than 127 papers and books on the subjects of wood chemistry, cellulose, hemicelluloses and carbohydrates. He has a world-wide reputation as a result of his widely used monographs on "Wood Chemistry." The 1st Edition was published with the late L. F. Hawley of the Forest Products Laboratory in Madison in 1926. This was completely rewritten as a new monograph with 14 other authors, besides the editor (L. W.). The 2nd Edition of the new monograph edited with E. C. Jahn, appeared in 1952.

Mother and daughter read the same page . . . and there's no problem of show-through from either side. TITANOX-A-WD—the water-dispersible anatase titanium dioxide white pigment—insures the opacity that makes reading a pleasure.

Look at both sides of the problem

TITANOX-A-WD keeps not only magazine pages but all types of paper stocks opaque without making them heavy. And it increases printing contrast. One more reason why TITANOX® titanium dioxide pigments—both anatase and rutile, especially TITANOX-RA-50—are No. 1 choice among papermakers. Titanium Pigment Corporation, 111 Broadway, New York 6, New York; offices and warehouses in principal cities.

TITANIUM PIGMENT CORPORATION
SUBSIDIARY OF NATIONAL LEAD COMPANY

IN CANADA: Canadian Titanium Pigments Limited, Montreal

6709

is situated on a 4¾-acre site, the

PJT NEWS OF CONVERTERS

New Paper Box Firm Formed in Flint, Mich.

Formation of a new firm, Flint Boxmakers, Inc., in Flint, Mich., to manufacture shipping containers and expected to employ 50 to 60 persons has been announced. Operations will begin about December 1.

Three former executives of the Flint Division of Mead Containers, Inc., have formed the new company. They are Robert S. Landaal, who was sales manager of the Flint Division; Ralph C. Seibel, chief industrial engineer, and William H. Welsby, sales service manager. Mr. Landaal is president, board chairman and chief executive officer of Flint Boxmakers, Mr. Seibel is the manufacturing manager and Mr. Welsby assistant sales manager.

Two other employees of Mead Containers Flint Division have joined the new firm. Buell Jones will be office manager and James Warner, assistant manufacturing manager.

Flint Boxmakers will specialize in fast delivery of corrugated shipping cartons.

Taylor Fibre Names Royal To New Post

John A. Royal has been appointed manager of vulcanized fibre sales by Taylor Fibre Co., Norristown, Pa. He will continue as manager of foreign sales, a position he has held since he joined the company in 1949.

In his new position, Mr. Royal will be responsible for both domestic and foreign sales of Taylorite vulcanized fibre. The company recently adopted the Taylorite trade name following improvements made in its vulcanized fibre as a result of advances in production techniques and equipment.

Mr. Royal was assistant to the president of Lawrence Johnson Co., Philadelphia, Pa., before joining Taylor Fibre. Prior to that he had been successively field sales promotion manager and assistant to the vice president in charge of sales at the Boston, New York and Philadelphia offices of Allied Kid Co. He graduated from the University of Pennsylvania's Wharton School in 1936 and later attended La Salle Extension University in Chicago.

Wolverine Names Deane Asst. General Manager

E. M. Deane, Jr., has been appointed assistant general manager of Wolverine Carton Co., Grand Rapids, Mich., a subsidiary of Packaging Corp. of America. Mr. Deane formerly was manager of Packaging Corp.'s American Box Board Division mills in Grand Rapids.

Replacing Mr. Deane as mill manager is M. Nossaman, formerly general superintendent of the American Box Board mills.

Fibreboard Constructing Plant in Phoenix

Construction of an integrated shipping container plant has begun in Phoenix for Fibreboard Paper Products Corp. Completion of the new plant is scheduled for March, 1960, according to William L. Keady, Fibreboard president.

Mr. Keady also announced the formation of a new packaging sales district to serve Arizona. Cecil E. Graham, who has been with Fibreboard since 1956 in the Phoenix area, was named district sales manager.

Heart of Fibreboard's Phoenix facility will be an 85-inch Langston corrugator. Built-in expansion provisions in the new plant will permit the initial output to be sharply increased as needed.

In addition to the corrugator, the container plant will be equipped with a three-color printer-slotter, stitchers, tapers, slitter-scorer and other finishing units.

Coast Envelope Moves To New Location

The Coast Envelope Co., 42-year-old Los Angeles manufacturer, has moved into a new 100,000-square foot, $500,000 facility in the Simons Industrial tract, according to John Davidson, vice president and manager. The new plant is at 2930 Vail Ave.

John A. Alexander was the contractor for the tilt-up single-story fire-proof building. Three deck-high truck bays and a rail spur provide service for the manufacturer.

The new Coast Envelope building

felt facts — PRODUCTION RECORDS BROKEN AGAIN WITH ALBANY FELTS!

TOP FELT RUNS 31 DAYS trouble-free!

The Actual CASE HISTORY

At a large paperboard mill in Washington, the Top Felt had always been the limiting factor on one of their multi-cylinder machines in obtaining maximum speed and production.

After consultation, the Albany Design Department made a special high synthetic content, plain-weave Top Felt with the Albany H-32 treatment for added strength and increased drainage characteristics.

H-32

RESULTS: This initial felt broke all records for high production and long life, running an amazing 31 days as compared with an average life of 15 days!

The report: "On 26½ pound board they were able to run up to 580 feet per minute; on 33 pound board, 530 feet per minute with no loss in drainage . . ."

2-1

3 Successive Felts all ran more than 30 Days!

This trial felt was no "flash-in-the-pan". The next three Albany Top Felts gave similar performances... all running better than 30 days of trouble-free operation.

Such performance is the result of careful design, a correct blending of fibers, proper chemical treatments, and close tolerances in manufacture.

AVAILABLE — UPON REQUEST

"Improved Felt Performance" handbook. Ask for your free copy from your Albany Felt Sales Engineer.

Talk it over with your Albany Felt Sales Engineer

AF ALBANY FELT COMPANY ALBANY, N. Y. The World's Largest Manufacturer of Paper Machine Felts

You get something extra with Wyandotte Chlorine

. . . a guarantee of satisfaction goes with every sale

You have a right to expect highest commercial purity in the chlorine you buy. To make sure you get it, we at Wyandotte keep our chlorine under rigid control every step of the way . . . from basic raw materials to finished product.

Our guarantee of satisfaction goes beyond this. For, in our book, satisfaction is measured in terms of results. And you'll find that your Wyandotte technical-service representative has a practical knowledge of chlorine handling and use that will serve you well. Write us about your needs today. *Wyandotte Chemicals Corporation, Dept. 765-J, Wyandotte, Michigan. Offices in principal cities.*

Wyandotte CHEMICALS

MICHIGAN ALKALI DIVISION

PACING PROGRESS WITH CREATIVE CHEMISTRY

is situated on a 4¾-acre site, the plant occupying 91,000 sq. ft., and office space 9,000 sq. ft.

The company's products and those of its wholly owned subsidiary, Coast Bookcover Co., are distributed throughout the United States, Mexico, Canada, the European Common Market and countries of South America and Africa.

New Firm Acquires Nat'l Fiberstok Envelope

The National Fiberstok Envelope Co., 2nd St. and Allegheny Ave., Philadelphia, Pa., has been acquired by a group of Philadelphia businessmen, who organized a new firm, National Fiberstok Corp., to own and operate the firm.

The firm, founded in 1912, is one of the largest manufacturers of expanding and specialty paper products and was headed by J. W. F. Blizard until the new group took over. Edward Howard is now president.

Harold E. Stassen, in his capacity as an attorney, had a role in the transaction as counsel for the new owners and is also a stockholder in the new firm.

In clarifying reports that he has purchased the plant, Mr. Stassen said that his role was a confidential one as attorney. His name appeared on papers as escrow agent for the new group and that may have erroneously given someone the impression that he had bought the firm, he said. He is not a member of the board of directors of the firm and is serving as counsel, he said.

The firm had previously purchased a new plant site near Hammonton, N. J., which it is now offering for sale, Mr. Stassen said.

Cascade Names Sales Exec. for Denver Area

William Bridenbaugh has been named district sales manager for the new $2 million corrugated container plant which Cascade Container Corp. is building near Golden, Colo.

The appointment was announced by R. M. Herman, assistant sales manager at the firm's office in Boise, Ida.

Mr. Bridenbaugh has been associated with Cascade Container Corp. in Utah and Colorado for the past two years. He has maintained headquarters in Salt Lake City.

Mr. Herman said production in the Denver area plant will begin next spring. He said additional sales representatives will be added to the Denver staff at that time.

Olin Mathieson Div. Appoints Carton Salesman

William C. Geddes has been appointed carton salesman for the Packaging Division of Olin Mathieson Chemical Corp.

Mr. Geddes will cover Ohio, Indiana, Kentucky, and part of Michigan. His headquarters will be in the Olin Mathieson Packaging Division office at 220 West North Bend Road, Cincinnati.

Doane and McLaughlin Advance at Nashua

Carl E. Doane, formerly sales manager of the Converter Sales Division of Nashua Corp., has been named sales manager of Nashua's Flexible Packaging Division. Walter P. McLaughlin succeeds Mr. Doane as sales manager of the Converter Sales Division. Both appointments were effective October 30.

A former member of the Flexible Packaging Division, Mr. Doane was a sales representative for the division in the New England area. Since January 21, 1953, he has been an executive in the company's Converter Sales Division. For the past four years he has been sales manager.

Mr. McLaughlin was formerly manager of sales for the corrugated box industry serving under Mr. Doane. A graduate of the University of New Hampshire in 1948 and a World War II Air Force Pilot, he joined the Nashua sales staff as a member of the company's Package Sealing Division in February, 1948.

He was transferred to specialty printing sales in July 1949 and, in January 1955, was promoted to assistant sales manager of Flexible Packaging Division where he directed sales in the produce and textile packaging fields. In June 1956, he was transferred to the newly formed Converter Sales Division to serve as assistant sales manager. He was named to direct corrugated box industry sales in that division in September 1957.

As sales manager of the Converter Sales Division, he will be responsible for overall direction of sales in corrugated box industry, the set-up box industry, and flocked products sales.

Back volumes of PAPER TRADE JOURNAL are available on microfilm from University Microfilms, Inc., 313 N. First Street, Ann Arbor, Mich.

There's a better way to pick the right liquid caustic

...let Wyandotte help you choose between 50% and 74% grades

It may pay you to switch from 50% to 74% liquid caustic . . . but there's no need for guesswork. With Wyandotte's help, you can find out for sure.

The exclusive conversion chart contained in our handy free guide, *74% or 50% Caustic Soda, Which for You?* will indicate for you whether freight savings will offset conversion costs. And if a change is in order, your Wyandotte technical-service man will give you invaluable help all along the line—from initial planning to unloading the first tank car. Get in touch with us today. *Wyandotte Chemicals Corporation, Dept. 765-J, Wyandotte, Michigan. Offices in principal cities.*

Wyandotte CHEMICALS
MICHIGAN ALKALI DIVISION

PACING PROGRESS WITH CREATIVE CHEMISTRY

How a Bleach Plant Model Reduced Engineering Costs for Buckeye

Although models were extremely valuable in this application, Buckeye warns that they can become an expensive toy if used improperly.

Extensive use of precisely detailed industrial models brought sizeable savings in dollars and construction time to Buckeye Cellulose Corp. during the recent expansion program which doubled the size of its Foley, Fla., wood pulp mill.

Models were used as the sole means of establishing process and instrument piping design and electrical conduit routing for construction of the multi-stage bleach plant and the five effect black liquor evaporator. No conventional drawings were made or needed.

Major Factor in Savings

While emphasizing that it's often difficult to trace savings to precise sources, Buckeye management believes models were a major factor in the dollar savings of 20 per cent on piping costs and 30 per cent on electrical costs for the bleach plant and evaporators as compared to costs of the same installations in Buckeye's first Foley plant.

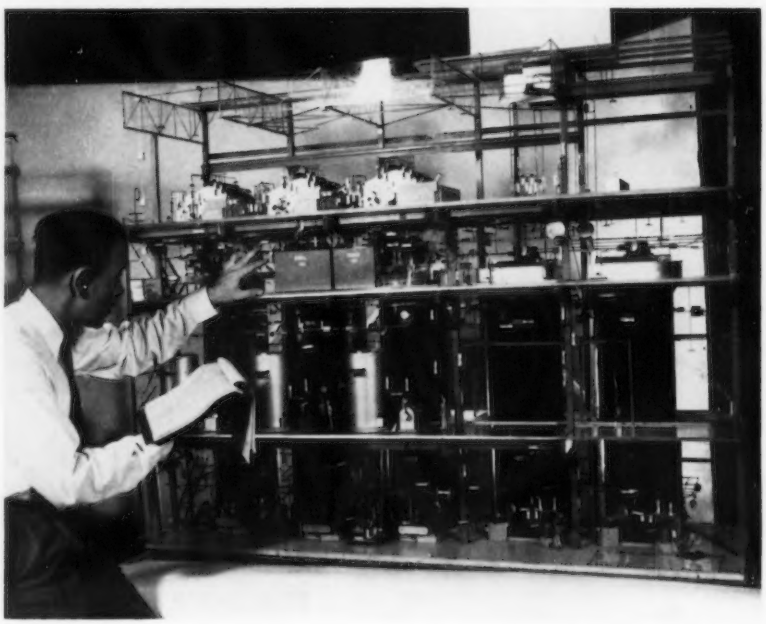
This use of construction models at Foley is but one more step in a developmental program on models going back several years within Buckeye and its parent company, The Procter & Gamble Co. P&G has made extensive use of models in its various construction projects during the past few years. Buckeye itself utilized models in building its first Foley plant which was completed in 1954, but then primarily as an engineering aid rather than for actual design purposes.

The most recent Foley experience, Buckeye feels, definitely established the values of modeling and the company would carefully consider additional use of models in any future expansion program. Buckeye believes, however, that modeling can become an "expensive toy" if used indiscriminately and unless specific uses of a given model are set firmly in mind and followed precisely throughout the construction program. Temptations to move away from original aims must be avoided.

Models for Specific Purpose

Here's a "step-by-step" report of the modeling portion of Buckeye's planning for the expansion which made the Foley installation one of the world's largest bleached kraft mills.

Because there was no guaranteed value to models and Buckeye didn't want to proceed with wide-scale use of a "tool" not properly evaluated, it was decided to concentrate use of models in those plant areas which



O. L. Wakeman, mill manager of Buckeye's plant at Foley, checks piping on bleach plant model. Note small figures of workers which indicate size of actual plant.

less expensive molded plastic components.) Radii or curves or other pipe

demonstration of the type of unexpected benefits which are almost

after work started, the bleach plant model (total size of 6½ feet long, 6

could be expected to make maximum use of the probable advantages of modeling. The complicated piping and electrical conduits of the bleach plant and evaporators made those two areas the logical choices.

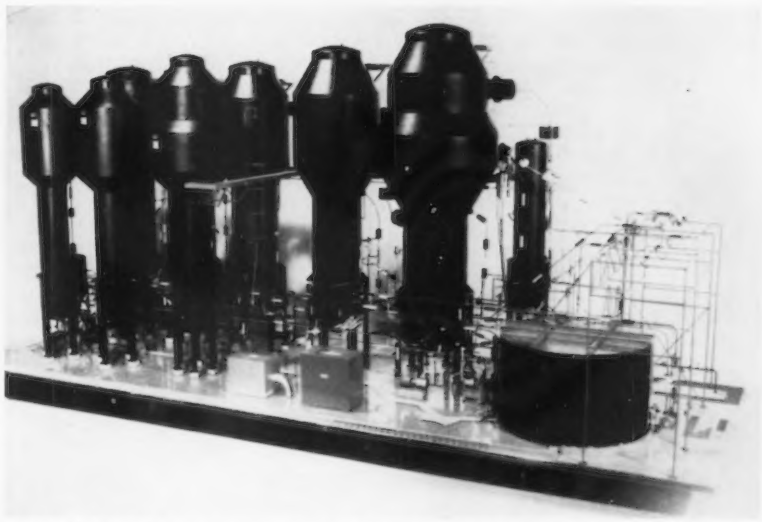
The decision to use models was made halfway through the fundamental engineering period. By then the equipment layout had been definitely set, so Buckeye engineers saw little point to modeling as a means of refining plant layout. It was then that the specific use was firmly established: to use modeling solely to establish process and instrument piping design and electrical conduit routing.

Dollar savings in engineering costs were anticipated, of course, but Buckeye expected other advantages:

1. The greater clarity of modeling over conventional piping drawings would provide an excellent opportunity to design the piping for minimum construction cost by eliminating unnecessary fittings and welds and obtaining the most direct routing.

2. When models are used, members of management, operating and processing departments can quickly visualize the new equipment and often make suggestions for improvements or reduced capital costs. By contrast, Buckeye feels these people don't have the time and often don't have the experience to visualize such an installation by looking only at conventional drawings.

3. After use during actual construction, models continue to be valuable as a training device for operating people.



Model of black liquor evaporator was built at Foley plant site to establish piping design and electrical conduit routing.

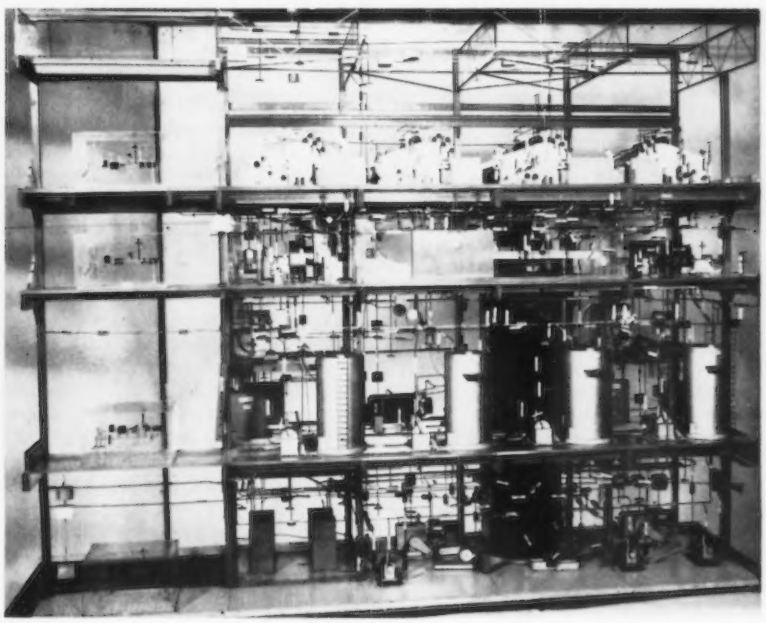
Building the Models

After the management decision to use models, the "basic model" for the bleach plant was assigned to a modeling contractor (Industrial Models, Inc., Wilmington, Del.). This "basic model" is the unit constructed to scale to show the building, structural supports and all equipment units but not to show the pipe lines, conduits or instrumentation. Hair-line accuracy to scale is essential, of course, if piping and conduit design is to proceed accurately. (The description which follows relates only to the bleach plant model in precise detail, but the evaporator model was built at the Foley plant site with similar procedures.)

The sole responsibility for the modeling operation rested with the engineering contractor for the construction project (Lummus Co., New York City). Lummus established an engineering task force at its office at Newark to handle the Buckeye job. Lummus engineers were already fully acquainted with what Buckeye wanted and what major equipment items were to be used.

The overall model supervisor was an expert piping designer from Lummus. Assisting him were a model mechanic supplied by Industrial Models, an electrical designer and an instrument specialist, both from Lummus, plus a Buckeye consultant who had been the lead man during fundamental engineering at Buckeye's Technical Division in Memphis, Tenn.

Piping design was worked out directly on the basic model by the use of 1/16 inch diameter brass wire soldered in place to which rubber discs were added at reasonable intervals to represent to true scale the outside diameter of the pipe and insulation. (This so-called "fine wire" technique has subsequently been outmoded by more realistic and



Model is sectioned for photography and for location in the field. Here is a vertical section showing half of the bleach plant, with other half shown on opposite page.

less expensive molded plastic components.) Radii or curves or other pipe fittings were made to scale by bending the brass wire to fit the centerline radius of curves or fittings. Lengths of pipe were made to scale but were not indicated directly on the model. Instead, the length of pipe was determined by scaling the model except in very close fitting places where the piping length was calculated from equipment dimensions. Valves were indicated on the model and their location was scaled, again excepting the close fitting locations.

Electrical conduit was shown regardless of size by a single 1/16 inch diameter wire. A color coding system was used to denote the various materials of construction. Instrument tubing was included on the model but the detailed connections around each instrument were not shown.

Sectioned at Strategic Points

The entire model, including piping and conduit, was sectioned at strategic points, both vertically and horizontally, so that it could be easily constructed and taken apart for photography and so that sections could be conveniently located in actual construction areas for easy reference by construction workers. (For example, the top portion of the bleach model showing the washers was located during construction on the top floor of the bleach plant where the washers were being assembled and piped. The bottom portion of the bleach model was located on the ground floor where piping was being done around pumps.)

Specialists from Buckeye's operating and processing departments visited Newark periodically during the model construction. Buckeye reports "many niceties and several sizeable cost reductions" growing out of these consultations between Lummus and Buckeye people during the modeling stage.

Example: Although layout had been definitely established and the decision made not to use modeling in an attempt to make further layout refinements, it became obvious to Buckeye and Lummus as the conduit design progressed that the layout of the electrical control rooms and associated ventilating equipment could be improved with considerable cost savings. Thus, these savings were made even after Buckeye had frozen that part of the design and after the design had been carefully scrutinized on drawings by experienced electrical engineers before the modeling stage. Buckeye cites this as "a forceful demonstration of the type of unexpected benefits which are almost invariably derived from models."

After the model was finished, isometric sketches of each individual pipe line over two inches were made solely as a basis for the pipe fabricator company's flat sketches. (Buckeye tried unsuccessfully to have the piping fabricator do flat sketches directly from the model but still feels that this procedure will eventually be possible, thus effecting additional savings on costs of drawings.) For piping two inches and below which was field fabricated, fabrication sketches were made directly from the model with good results.

Used in the Field

When ready for shipment to the construction site at Foley 16 weeks after work started, the bleach plant model (total size of 6½ feet long, 6 feet wide and 5 feet high) was shipped in a special covered truck with no unusual packing other than being firmly secured to the truck bed. Following a brief period of use in the construction office at Foley for general planning, the model was moved into the actual construction area for extensive use by foremen and craftsmen.

Buckeye reports that comments on the model technique from design engineers, field engineers and field contractors vary greatly. Some are highly enthusiastic; some would prefer to stick to the conventional drawings they have used so long. Buckeye itself continues to view models as "a valuable tool if used properly, an expensive toy if used improperly."

Flexible Rubber Pipe Used in Underwater Waste Disposal System

One of the largest installations of its kind was recently completed in New Jersey, when an 1864-ft. length of large diameter flexible rubber pipe was laid from the shore to the channel of the lower Delaware River. The pipe—a product of Raybestos-Manhattan, Inc., Passaic, N. J.—was designed to discharge processing wastes from a large chemical plant in that area.

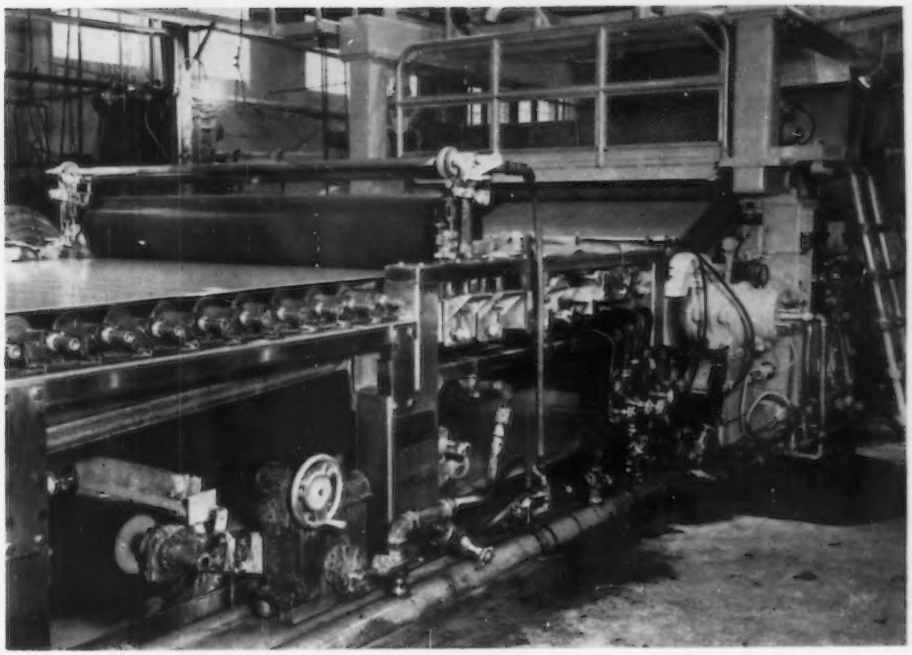
The line was installed from an offshore dredge which first scooped out a trench for it on the river bottom. Successive 50-ft. flanged lengths were bolted together, using corrosion-resistant bolts and nuts. Flexibility of the line simplified the bolting operations. The free end was just lifted out of the water, without disturbing the sections already in place, and attached to the next length on the dredge. Then the dredge backed off one pipe length and droppd the newly attached length in place. A heavy cast iron collar bolted to each rubber pipe anchored it to the bottom.

"This procedure," the user said, "was far simpler than underwater bolting or welding that would have been necessary with a metal pipeline. An unprotected metal would have a relatively short life in the Delaware River at this point because of salt water corrosion, aside from the fact that the line itself carries mineral acid (nitric and sulphuric) wastes."

WORKMEN prepare to connect two sections of flexible rubber pipe. After lengths were bolted together, dredge backed off one pipe length, dropped newly attached section in place. Note heavy, cast iron collars which served to anchor pipe to river bottom.

Although it is operated as an open-end 12-in. diameter pump line, the rubber pipe is designed to withstand 100 p.s.i. This strength is provided by a nylon and steel wire carcass. A neoprene cover is used for protection against external damage, above or below water. Depending upon the tides, 50 to 80 feet of the line could be exposed to weathering and floating debris. The neoprene covered pipeline is expected to last maintenance-free for the lifetime of the present waste disposal facilities.

schedule had been set up to make



Suction area is comprised of three S. S. suction boxes and a rotary suction unit.

Newton Falls Paper Installs New Fourdrinier in Record Time

Only twelve days shut down were required for rebuilding the headbox and installation of a completely new and wider fourdrinier on number two machine.

The Newton Falls Paper Co. at Newton Falls, N. Y. has recently completed a major machine modernization program that has set something of a record in machine shutdown time. Complete coordination and cooperation between all mill departments and between mill management and the machinery builder contributed to the unusually successful project.

Part of the Newton Falls project consisted of the installation of a new complete and wider fourdrinier, the adjustment of the existing flow control unit to the new fourdrinier and the installation of a new horizontal size press—on the No. 2 paper machine. The Sandy Hill Iron and Brass Works was the machinery builder.

According to Ronald W. Hynes, president and general manager, his new fourdrinier in producing an exceptionally level sheet, and has already achieved a machine speed-up of more than 25 per cent.

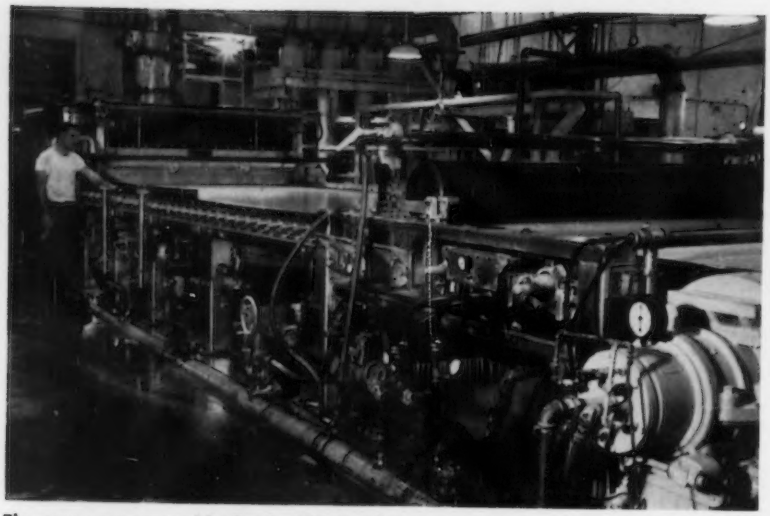
A great deal of machine room remodeling preceded the installation of the new equipment. Of major proportions was the work of excavating for and building of a ten foot deep pit to accommodate a new white water and vacuum system. Much of this pit was hewn out of bed rock. No blasting was done and the paper machine was never stopped because of the project going on by its side.

During the planning, engineering and building of the new machinery frequent planning conferences were held between the groups in the mill affected in any way by the program. Other conferences were frequent between the mill management and the machinery builder.

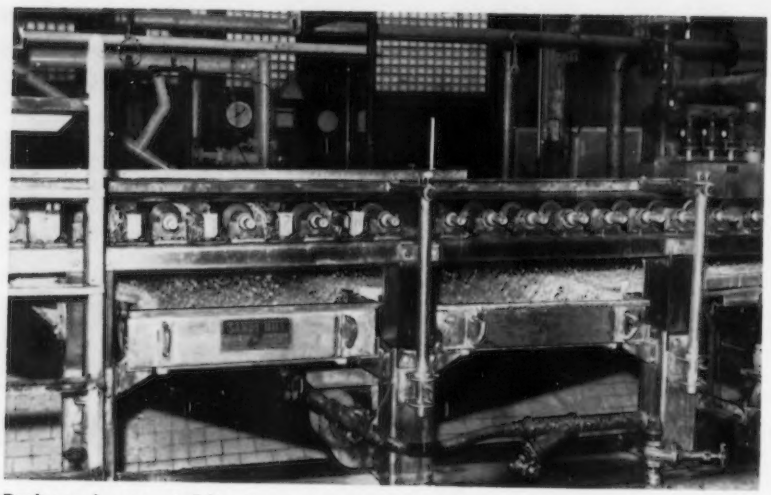
The results were a coordinated timing schedule that saw every phase of dismantling, machine room preparations and machine installation carried out with little lost motion or overlapping of effort. Also machine designing had been so carefully fitted to existing mill conditions and requirements that salable paper has been in continuous production since the day of start-up.

Headbox Rebuilding

At the signal for machine shutdown one crew went to work removing the flow control unit for trucking to Sandy Hill where a 24-hour-a-day



The new non-removable Sandy Hill fourdrinier, made from standardized elements, is of corrosion resistant construction.



Drainage is promoted by six wire contact type deflectors with phenolic rosin blades touching the wire.

schedule had been set up to make the required width adjustment. The headbox and slice were removed from the multiple manifold flow distributor unit for widening by 12 inches to meet the width of the new fourdrinier. A third distributor roll was added in the headbox; this one in the throat above the flow distributor. The headbox sides were raised 12 inches to allow for substantial increases in machine speed. In addition to widening, the Neilson slice was rebuilt to allow for horizontal as well as vertical adjustment.

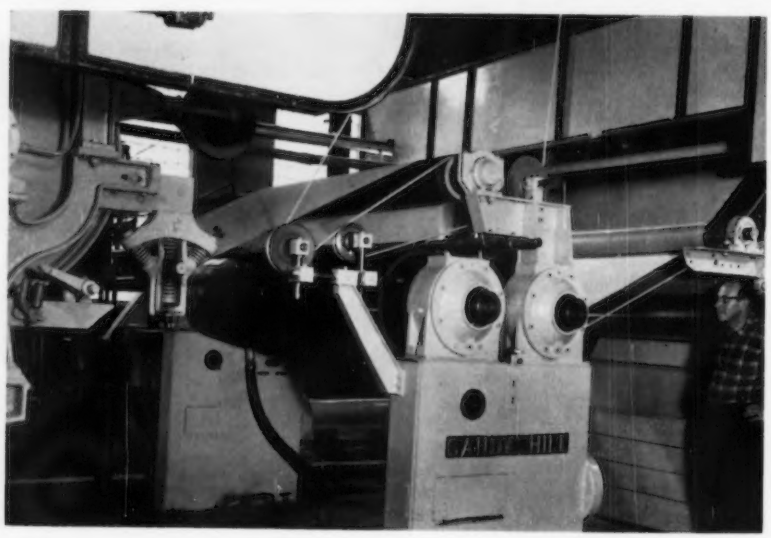
An interesting observation was made when the headbox was removed from the multiple manifold flow distributor. It was found that the entire stainless steel interior surface of the flow distributor, after five years of continuous service, had the appearance of a highly polished chromium surface.

The rebuilding of the headbox was accomplished in the allotted time and was back in Newton Falls in ample time to keep the mill schedule rolling.

Installing New Fourdrinier

Meanwhile, back at the mill the old fourdrinier had been dismantled; the machine pit had been entirely tile lined; a new stainless steel white water collecting box and piping system had been built; new sole plates had been laid; the suction couch had been reset, and the new fourdrinier had been put into place.

With the flow control unit back in place and the stock lines reconnected, the signal was given to open the stock line valves, and before the end of the twelfth day after shutdown, salable paper was again rolling off No. 2 machine.



Gordon Black, paper mill superintendent (right) watches operation of the new horizontal size press.

Credit for the remarkable accomplishment is shared equally by those who planned and those who carried out the project. Planning and engineering was under the direction of Arthur C. Smith, plant engineer; John E. MacAleese, assistant plant engineer; Thomas Owens, master mechanic; Russell L. Clark, general superintendent; Gordon Black, paper mill superintendent, and the engineering and erection staff of The Sandy Hill Iron and Brass Works.

New Fourdrinier

The non-removable fourdrinier is one of Sandy Hill's New Ideal models comprised of standardized units. It is of all corrosion-resistant construction. It has a 99-inch by 67-foot wire. A Sandy Hill Bertrams shake, with built-in variable speed drive, was installed to shake the first table roll section. The second table roll section is non-shaking. The pivot point for the shaking section is a bonded rubber joint.

The breast roll arrangement provides for lowering the roll onto a remover board to allow for wire change without disturbing the bond plates or the bearing receptacles.

The saveall system consists of stainless steel sheds and saveall pans under the full length of the table to carry the white water to a stainless steel white water box. The pans nest for easy removal.

The rubber covered table rolls are supported by anti-friction bearings with adjusting screws for raising or lowering the table rolls. Six wire contact type deflectors with phenolic resin blades promote drainage and prevent "throw-over." An eight-foot ruler edge deckle with a rubber lip is adjustable both horizontally and vertically.

The wire stretch, with a totally enclosed double reduction worm gear unit, moves the wire roll throughout its entire range with fingertip ease. A conventional Gilbert and Nash wire guide is located on the return wire.

The suction box section incorporates special design features developed at Newton Falls to overcome problems of shadow marking. The three stainless steel suction boxes have slotted covers with openings the full width of the wire and deckles for deckling in. A Flo-Vac rotary type suction unit is also part of the suction box area.

New Size Press Unit

The new Sandy Hill horizontal size press has been set up to handle partial coating on the machine. It has a Foxboro pneumatic loading system to control nip pressure and diaphragm air pressure.

Two showers, with three spouts each, provide for uniform "size" distribution across the press. Adjustable funnels at each end of the roll nip return the excess size to the tank for recirculation.

Although jointly owned by two publishing houses — McGraw-Hill Publishing Co. and The Chilton Co. of Philadelphia—95 per cent of the Newton Falls mill production is sold on the open market.

Raw materials are 80 per cent selected top grades of waste paper; the rest is sulphite pulp. Waste paper used is ledger stock, both white and colored, and cup stock.

Two of the largest John Waldron Corp.'s Microjet coaters handle the off-machine coating at Newton Falls.

The research laboratory has been completely reequipped to better enable the mill to concentrate on new grades and specialties and on the constant improvement of present grades. The Newton Falls laboratory facilities are also available to those requiring assistance in the study or investigation of any type of paper problem.

PTJ + NEW LITERATURE

Personnel Management in Small Companies

Attempts to answer two questions—How much should small companies copy the personnel practices of large firms? What, if any, are the unique problems of the small company? Also describes ways of approaching personnel problems that have worked well in small firms. 102p Book. Price 50c. 10 copies 40c each. 100 or more 30c each. Institute of Industrial Relations, 100 BAE Bldg., University of California, Los Angeles 24, Calif.

High Pressure Hydraulic Cylinders

Features a handy fold-out arrangement of mounting diagrams with easy-to-use direct reading dimension charts for use in selecting and specifiying hydraulic cylinders. Catalog-Engineering Guide 117. S-P Mfg. Corp., 30201 Aurora Rd., Cleveland 39, Ohio.

Hankison Refrigifilters

Features a colored flow chart that describes the function of each section of the unit and illustrates the manner in which condensate and contaminants are removed from the air. Bulletin F-100. Hankison Corp., College & Pike Sts., Canonsburg, Pa.

Procedure for Grinding the Body of Mill Rolls

Gives the correct procedure for grinding the body of mill rolls, which is a highly controversial subject. Contains information on speeds, feed rates, etc. Bulletin RG-59. Landis Tool Co., Waynesboro, Pa.

Recovery of Heat and Chemicals

Presents a summary and detailed data on kraft recovery, neutral sulphite recovery, sulphite recovery and power boilers. Bulletin P-2. Babcock & Wilcox, Boiler Div., Barberton, Ohio.

Scientific and Test Instruments

Includes a brief description, typical illustration, salient specifications, and reference for additional information on each family of instruments. Catalog-G-10. Minneapolis-Honeywell Regulator Co., Wayne & Windrim Aves., Philadelphia 44, Pa.

Transcope Indicators

Contains illustrated sales copy on the Taylor 90K Series with "Servomatic" powered pointers. Also includes mounting dimensions. Catalog 98347. Taylor Instrument Companies, Rochester 1, N. Y.

The Facilities of Moog

Shows by extensive use of photographs, the engineering and production facilities at their four plants and research laboratory. 24-page Book. Moog Servocontrols, Inc., East Aurora, N. Y.

The Outlook for Tall Oil Production and Consumption

Possible future production of tall oil is forecast up to 1965. Markets for tall oil products such as rosin and fatty acids are discussed in detail.

Joseph M. Wafer,
West Virginia Pulp & Paper Co.,
New York, N. Y.

Whole tall oil is a mixture of rosin acids and fatty acids with minor amounts of sterols, higher alcohols and other nonacids. The rosin acids resemble those of commercial rosin, the fatty acids are mostly oleic and linoleic like the fatty acids of soyabean oil.

The properties of fatty and rosin acids vary considerably with the kind of pine wood used and with the details of wood handling operations. Whole tall oils ranging in rosin acids from 35 to over 55 per cent, in fatty acids from 60 to 35 per cent, and in sterols, etc., from 5 to 10 per cent are to be found.

Statistics are always difficult to use currently because of the time lag and likewise the many revisions that are usually made by the different agencies. For this purpose, the current statistics are less important than what the industry projects for the future so that some estimate can be made of the product in which this group is primarily interested, ie., rosin.

The author writes only about tall oil production from southern pines. There is a small but appreciable amount produced in other areas.

For our purposes the following sources of information are used:

Bureau of Census U. S. Department of Commerce.

Pulp Chemicals Ass'n.

U. S. Pulp Producers Ass'n., Inc.

Table I shows that in the calendar year, 1958, the U. S. Pulp Producers Ass'n. reported the production of kraft pulp from pine (paper grades) in the Southern states 9,203,726 tons.

Projected at rates of 70-90 pounds of crude tall oil per ton of pulp would provide 322,130—414,168 tons of crude tall oil. In turn, assuming that sufficient fractionation capacity would be available and again assuming that a yield of 35 per cent of tall oil rosin would have been possible that quantity of crude tall oil would have provided tall oil rosin in the amount of 112,746—144,959 tons.

To this potential would be added the amount of crude tall oil that is produced as a result of using pine wood in the production of rayon and viscose type pulps. No individual figures are published on this, but potentially there are probably at least

From a paper presented at the Naval Stores Breakfast—National Paint, Varnish and Lacquer Ass'n., Atlantic City, N. J., on October 21, 1959.

TABLE I

POTENTIAL AND ACTUAL TALL OIL AND ROSIN PRODUCTION IN 1958

Production in Southern States Paper Grades Pulp from Pine Kraft 1958	Projected C.T.O. Yields /Ton of Pulp	Potential[1] C.T.O. Production	Potential[2] Rosin in C.T.O. at 35 per cent Yield	C.T.O. Production 1958 Pulp Chem. Ass'n	Potential[2] Rosin in C.T.O. at 35 per cent Yield	Actual Production Reported by Dept. Agr. 1958
9,203,726 tons	70 lbs.	322,130 tons	112,746 tons	331,612 tons	116,064 tons	73,682 tons
	75 lbs.	345,139 tons	120,799 tons			
	80 lbs.	368,149 tons	128,852 tons			
	85 lbs.	391,158 tons	136,905 tons			
	90 lbs.	414,168 tons	144,959 tons			

[1] The potential C.T.O. (crude tall oil) production does not envision any crude tall oil availability from grades of dissolving pulp made from pine wood. Actual production reported to Pulp Chemicals Assn. undoubtedly includes crude tall oil made from skimmings obtained in the production of dissolving grades of pulp (rayon pulp) where pine wood is used. The figure above assumes all skimmings are acidified.

[2] Assuming sufficient fractionation capacity is available.

TABLE II

GUM AND WOOD ROSIN PRODUCTION

Year Ending March 31st	Gum	Wood	Total	Added Production of Tall Oil Rosin
1909	1,998,400 dms.		1,998,400 dms.	
1939	1,466,344 dms.	610,330 dms.	2,076,674 dms.	
1949	921,220 dms.	1,154,890 dms.	2,076,110 dms.	
1959	369,350 dms.	1,182,620 dms.	1,551,970 dms.	305,060 dms.

30,000 tons of crude tall oil annually available there.

The Pulp Chemicals Ass'n. reported for the calendar year, 1958, a production by its members and purchases from non-members totaling 331,612 tons of crude tall oil. Again, assuming a yield on the average of 35 per cent, it would have furnished a source of tall oil rosin equivalent to 116,064 tons.

The reports issued by the Department of Agriculture indicate for the full calendar year, 1958, a production of tall oil rosin equal to 73,682 tons. We should recognize, however, that there are rosin fractions being taken off these distillation streams that are interchangeably used against gum rosin, wood rosin and tall oil rosin. However, because of the specifications contained in the revised Naval Stores Act, these fractions cannot be qualified as tall oil rosin, and consequently not reported in any production figures. To that extent, the figures are somewhat misleading as to the actual production of tall oil rosin if we wish to consider interchangeability.

Wood and Gum Rosin Production

Ernest Holdman, a veteran of the Naval Stores industry, and currently consultant for Heyden Newport Chemical Corp., has for many years compiled Naval Stores data covering production, disposition, etc., of rosin and turpentine.

Using some of these figures over a 50-year period, we present production data for gum and wood rosin, and more recently, tall oil rosin, in Table II. We have arbitrarily selected four periods for each of the Naval Stores years ending March 31, 1909, 1939, 1949 and 1959.

Including the production of tall oil rosin in the Naval Stores year ending March 31, 1959, we arrive at a total of 1,857,030 drums, which compares with the production of 1,998,400 drums of rosin produced 50 years ago which at that time all consisted of gum rosin. To those of us who are engaged in the chemical industry, we would certainly have to reach the conclusion that very little progress production-wise has been made in this 50-year period except to the credit of the Wood Naval Stores segment, that they were able to fill the gap left by the constant decline in gum rosin production.

Mr. Holdman, has publicly stated on numerous occasions that the supply of stumps in economic locations may likewise adversely affect the future production of wood rosin, and to that extent declines may be expected according to him in the not too distant future.

"Constant decline in gum rosin production and indications of a similar situation developing in wood rosin may lead to tall oil becoming a large factor as an alternative source of supply of rosin."

The constant decline in gum rosin production over the years and the indications of a similar situation developing on wood rosin production would lead one to believe that the entrance into the tall oil production field by large factors in the Naval Stores industry was in anticipation of the opportunities offered to them of an alternative source of supply of rosin.

Such companies would include Hercules Powder, Heyden Newport Chemical Corp., Monsanto-Emery, Glidden Co., Crosby Chemical Co. and Arizona Chemical Co. The latter company is a jointly owned enterprise involving American Cyanamid Co. and the International Paper Co. American Cyanamid is a large factor in the production of rosin size and International Paper, of course, is a large consumer.

Tall Oil Rosin Availability

Let us review, then, what is currently taking place in tall oil to see to what extent tall oil rosin availability from this industry might help to fill the gap represented by the constant decline in gum rosin production, and to what extent it might supplement the further losses that may be involved with wood rosin production.

For this purpose, Table III gives the following information:

Production of kraft pulp (paper grades) from pine wood in the South for the first six months of the calendar year, 1959, as reported by the U. S. Pulp Producers Ass'n., totaled 5,209,933 tons. Again assuming yields of 70-90 pounds of crude tall oil per ton of pine pulp, it offered a potential source of crude tall oil to the extent of 182,347—234,447 tons.

Assuming adequate fractionation capacity and again assuming a yield of 35 per cent of tall oil rosin, that quantity of crude tall oil would have provided a source of 63,821, to 82,056 tons of tall oil rosin.

Production of crude tall oil and purchases from non-member companies as reported to the Pulp Chemicals Ass'n. for the first six months of the calendar year, 1959, totaled 205,393 tons. Assuming a potential yield of 35 per cent of rosin, this would have provided a source of 71,887 tons.

The actual production of tall oil rosin for that six-month period, as reported by the Department of Agriculture was 46,322 tons.

On the potential availability of crude tall oil, we do not take into consideration the amount of crude tall oil that becomes available from the production of rayon and viscose type pulps by the kraft process.

Projecting crude tall oil production for calendar year, 1959, we would come up with a potential tall oil rosin equivalent of 552,976 drums of 520 pounds each. However, if we conclude that the actual production will be double that of the first six months, then for the full calendar year of 1959 the tall oil rosin production would reach 356,320 drums. Again, the potential crude tall oil availability would be enhanced by the quantity that is available from the production of rayon and viscose pulps

"While the pulp and paper industry has continued to expand, it is not likely that we will see kraft pine pulp production sufficiently large to permit tall oil rosin to completely replace wood rosin."

where ever pine wood is used.

Considering that the production of gum rosin for the Naval Stores ending March 31, 1959, totaled 369,350 drums of 520 pounds each, and again taking into consideration that year by year there has been a constant decline in the production of gum rosin, we may see for the first time that for the Naval Stores year ending March 31, 1960, that tall oil rosin production may surpass gum rosin production.

Table IV gives projections of crude tall oil and tall oil rosin production for the years 1960 and 1965. These are based on kraft pulp production from pine in the Southern States only. The 1960 figure for pulp production is the capacity projection of the U. S. Pulp Producers Ass'n. The 1965 figure is based on the U. S. Dept. of Commerce report of July 15, 1959 "Pulp, Paper and Board Supply Demand—Newsprint Outlook, 1959." From this report, with the assistance of the U. S. Pulp Producers Ass'n., a projection was devised for southern pine kraft pulp capacity in 1965. Then as in previous tables crude tall oil and tall oil rosin figures were developed.

Tall Oil Rosin Insufficient

Ernest Holdman indicates that for the Naval Stores year ending March 31, 1959, the production of wood rosin amounted to 307,481 tons. To provide 307,481 tons of tall oil rosin, the amount of crude tall oil availability would have to total 878,517 tons. This is based on a yield of 35 per cent of tall oil rosin, and again the assumption that fractionation and distillation equipment would so provide.

Translating this back in terms of pulp, and utilizing a yield of 90 pounds of crude tall oil per ton of pine pulp, it would be necessary to produce 19,522,711 tons of kraft pulp utilizing pine as the source.

While the pulp and paper industry has continued to expand, it is not likely that we will see a production such as that for some considerable period, we have to conclude that tall oil for a great many years to come will be unable to replace the production of wood rosin as reported for the Naval Stores year ending March 31, 1959.

Ernest Holdman predicts that possibly gum rosin production may take a new lease on life, or the country may be forced either to import rosin or certainly decrease its exports to those countries that can be supplied with rosin from other world sources.

Otherwise, other products will have to be substituted for rosin for the many uses now involved.

Price Outlook

The rosin acids available in crude tall oil potential production indicate that there is insufficient fractionation capacity to take full advantage of these opportunities. This situation will certainly be remedied, as there has recently been an announcement of a new fractionation unit to be installed in Louisiana with a put-through of a minimum of 40,000 tons of crude tall oil annually. Two other expansions have also been indicated that will probably have a further need of approximately 25,000 tons of crude tall oil per year.

Economics would indicate that

TABLE III

POTENTIAL AND ACTUAL TALL OIL AND ROSIN PRODUCTION

FIRST HALF OF 1959 AND FULL YEAR ESTIMATED

Production in Southern States Paper Grades Pine Kraft First 6 Months '59	Projected C.T.O. Yields /Ton of Pine Pulp	Potential[1] C.T.O. Production	Potential[2] Rosin in C.T.O. at 35 per cent Yield	C.T.O. Production 6 Mos. '59 Pulp Chem. Ass'n	Potential[2] Rosin in C.T.O. at 35 per cent Yield	Actual Production Reported by Dept. Agr. 6 Mos. '59
5,209,933 tons	70 lbs.	182,347 tons	63,821 tons	205,393 tons	71,887 tons	46,322 tons
	75 lbs.	195,372 tons	68,380			
	80 lbs.	208,397 tons	72,939			
	85 lbs.	221,422 tons	77,498			
	90 lbs.	234,447 tons	82,056			
The potential for the full calendar year, 1959, at the above rate is projected as follows:						
10,419,966 tons	70 lbs.	364,694 tons	127,643 tons	410,786 tons	143,775 tons	
	75 lbs.	390,744 tons	136,760			
	80 lbs.	416,794 tons	145,878			
	85 lbs.	442,844 tons	154,995			
	90 lbs.	468,894 tons	164,113			

[1] The potential C.T.O. (crude tall oil) production (C.T.O.) does not envision any crude tall oil availability from grades of dissolving pulp made from pine wood. However, actual production reported to Pulp Chemicals undoubtedly includes crude tall oil made from skimmings obtained in the production of dissolving grades of pulp (rayon pulp) where pine wood is utilized. Above figure assumes all skimmings are acidified.

[2] Assuming sufficient fractionation capacity is available.

TABLE IV

PROJECTIONS OF CRUDE TABLE OIL AND ROSIN PRODUCTION

Year	Pine Kraft Pulp Production	C.T.O. yields /Ton of Pulp	C.T.O. Production	Rosin in C.T.O. at 35% yield
1960	11,566,685 tons	70 lbs.	404,833 tons	141,692 tons
		75 lbs.	433,750 tons	151,813 tons
		80 lbs.	462,667 tons	161,933 tons
		85 lbs.	491,584 tons	172,054 tons
		90 lbs.	520,500 tons	182,175 tons
1965	13,596,000 tons	70 lbs.	475,860 tons	166,551 tons
		75 lbs.	509,850 tons	178,448 tons
		80 lbs.	543,840 tons	190,344 tons
		85 lbs.	577,830 tons	202,241 tons
		90 lbs.	611,820 tons	214,137 tons

there will be more price strength in the foreseeable future in the rosin fractions of tall oil than in the distilled or fatty acids, except where specialty products may be involved.

The upward price movement announced for the fourth quarter of 1959 on wood rosin of 90 cents per 100 pounds and further price increases on light grades of rosin size for the same period follows a previous decline in the price structure of distilled tall oil and fatty acids due to competitive conditions in the price of soya bean oil with which it competes in the protective coating industry.

We have shown in Table III that the production of crude tall oil for the first six months of the calendar year, 1959, and projected at the same rate for the full calendar year, would have a potential of 552,976 drums, although the actual production may only reach 356,320 drums if it followed the actual production pattern for the first six months of 1959. This quantity would be just about enough to provide for the equivalent of the rosin needed in terms of rosin size for the paper industry, for, in the Naval Stores year ending March 31, 1959, government figures indicated that the paper industry consumed 546,266 drums.

It must also be taken into consideration that, with the modern equipment installed at these tall oil fractionation plants, the color standards of tall oil rosin in many cases are such that they cannot be graded on the American Rosin Scale. This could mean that most of the light grades of rosin size in the future will look toward the utilization of tall oil rosin.

Use in Protective Coatings

The protective coating industry has always been a substantial consumer of tall oil products made possible by good quality products coming out of the industry, and for a substantially long period, a stable price structure.

In the protective coating industry tall oil fatty acids have made considerable inroads due largely to the wide price fluctuation of soya bean oil with which it competes.

While the price structure of soya bean oil was going up, it made possible substantial applications of tall oil fatty acids because of the economic advantage. However, now our industry faces an adverse situation in that the prices of soya bean oil have been moving downward, and to that extent, the tall oil fatty acids may find substantial difficulty at present price levels to cope with that situation.

With a bumper crop of soya before us, and the indications that cotton seed oil will sell at lower levels would make it appear that the price structure on soya bean oil may decline further. Cotton seed oil and soya bean oil compete for interchangeable uses in the edible field, and it would be unreasonable to expect the processors of soya bean oil to lose position.

It appears at this stage that with the Naval Stores factors in tall oil production the prime effort will be in the direction of the tall oil rosin and that fractionation equipment will be installed to take advantage of all of the tall oil rosin that may be made possible from the production of crude tall oil.

To that extent, unless the tall oil producers can find some unique application for the tall oil fatty acids, it is inconceivable that they can afford to lose their position in the protective coating field.

Therefore, it would appear on the surface that if low prices are going to prevail on soya bean oil over the foreseeable future, we must give every consideration to finding other uses for these tall oil fatty acids.

With the crude soya bean oil prices at present levels, about 2 cents a pound must be added to the cost of refining and freight-largely to the primary markets. Against this is the need of adding alcohol either in the form of pentaerythritol or glycerin to make useable the tall oil fatty acids. In most cases, this averages out about 3 cents a pound. Therefore, if the competition in the protective coating field is against soya bean oil, one can easily measure the price relationship that must exist in order to be competitive.

Solution to Problem

To meet this price situation, the tall oil producers then must face several alternatives:

1. Obtaining lower price structure on crude tall oil.

2. Securing markets outside of the protective coating field where it may not be subject to the same price competition as from soya.

3. Producing derivatives from the tall oil fatty acid fractions, which may then permit upgrading of the price structure.

The protective coating industry has always been a substantial consumer of tall oil products made possible by good quality and, for a substantially long period, a stable price structure.

4. Finding more available markets for two of the fractions which constitute perhaps 25 per cent of the original crude feed, i.e., tall oil pitch and tall oil heads. Much of these fractions are being burned as fuel perhaps not to exceed $20.00 a ton so that currently, they represent quite a drain on the tall oil operations.

5. A further alternative is to raise the price of tall oil rosin more nearly to the wood rosin price, particularly where they may be interchangeable say for the production of rosin size. In that area, of course, the paper industry would be paying a higher price in order to get some final benefits.

Further Progress on the Outside Storage of Southern Pine Chips

Additional evidence indicates that outside storage of chips in the South has no deleterious effects. In fact, pulp quality may be improved.

J. A. Holekamp
Forest Engineer
American Pulpwood Ass'n.

Preliminary results to determine the feasibility of outside storage of Southern pine chips appear favorable. For a region which consumed over 15.5 million cords of pine pulpwood during 1958 (and stored a substantial portion) the outside storage of chips holds promises: of reducing or even eliminating wood loss in storage, with pulp characteristics remaining satisfactory, and in some cases, improving; and of effecting savings in the cost of handling wood at mill yards.

Some information has been collected and presented in previous releases, namely, No. 57R47, entitled "Chip Storage in Outside Piles" (PAPER TRADE JOURNAL, March 24, 1958) and 58R26, entitled "Outside Storage of Pine Chips, Progress Report No. 1" (PAPER TRADE JOURNAL, Dec. 8, 1958). This paper represents Progress Reports 2 and 3; it relates further findings concerning outside storage of chips in the South.

LOUISIANA

For one week prior to May, 1959, 196 units of green sawmill chips were unloaded from boxcars, transported by trucks, and dumped into the 27,500 cu. ft. chip storage crib to be seen in Figures 1 and 2. Calculations indicate a chip compaction of 140 cu. ft. per 500 lb. green pine unit. This was accomplished by running trucks onto the pile and spreading the chips with a crawler tractor. A routine collection of test information began on May 1, 1959.

Pile Design

The exposed chips face north and south (see Figure 1). Wooden containing walls, held together with wire cables, permit storage of chips 25 feet in height. The pile is 89 feet in length, 20 feet in width and its top is 20 feet square. Provision was made to collect the following information about the pile:

Angle of repose for free flowing chips. The north ends of the wooden containing walls have a 45° slope. This proved to be the natural angle of repose.

Maximum grade for vehicles. Figure 1 shows the south ends of the containing walls constructed with a 30° angle of slope. It was noted that this grade is still too great for successful operation of a crawler tractor; the machine was not able to gain traction on the loose sliding chips.

Interior Temperatures. Nineteen thermocouples and one continuously recording thermometer were spotted within the pile along a vertical plane which is equidistant from each containing wall. Wires extended from each thermocouple to the wall having the western exposure.

Within the first 11 days after the pile was laid down, temperatures rapidly increased 54.5°F., or from 92.5°F. to 147°F. Then temperatures appeared to drop off about seven degrees and hold at this level for about a month's time. Between June 11 and July 10, temperature slowly decreased an additional 16 degrees.

Reading for each individual thermocouple indicated this temperature pattern existed at nearly every point in the pile. Readings were almost always taken between 8:00 a.m. and 2:00 a.m. Thermocouples on the north side of the pile yielded the lower

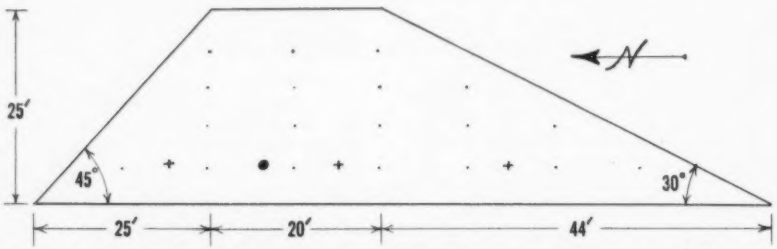


Figure 1: Schematic configuration of cribbed chips shows position of 19 thermocouples (dots), recorder (black circle), and wood density samples (crosses).

Based on American Pulpwood Ass'n. Technical Releases 59R40 and 59R41. Illustrations courtesy of APA.

noted, this loss does not include the wood lost due to the activity of the

vember 16, samples of chips from the pile were submitted to the Southern

more chlorine than usual and the residual was down. Both the second and

readings while the south side consistently showed higher temperatures.

Changes in O_2, CO, and CO_2 levels. At three separate levels in the pile, ½-inch SS tubes, ten feet long, extended from the wall to the center of the pile. Testing to date, however, has indicated insignificant changes in the quantitative levels of these three gases. This fact has caused some "scratching of heads". It had been thought that oxidation caused the rapid temperature rise which took place within the 10-14 days after the chips had been laid down.

Specific Gravity. Three boxes constructed of SS wire and framing were filled with chips sampled from this test pile at the time it was formed. These boxes were then placed within the pile as noted in Figure 1. When the experiment is terminated, the boxes will be reclaimed and their dry wood weight measured. In this manner an accurate measure of wood substance may prove possible.

Pulp Quality

For control purposes, comprehensive pulping of chip samples was made at the time the pile was formed. Subsequent cooks of chips sampled from the pile at 6, 11, and 15 week intervals showed no significant variations in pump yield, freeness, C.E.D. viscosity, mullen, and tear. There was a measurable loss in turpentine yield, but this is to be expected because of the volatile nature of the material.

Chips vs. Roundwood

In effect, it appears that the above results substantiate previous findings: that Southern pine chips stored outside for the three summer months fail to show deterioration.

Compare this to peeled and rough pine pulpwood rick-piled during the same critical period. Although no pulping tests had been run on the rough and peeled pulpwood there was no visible deterioration within the pile of peeled pulpwood. The same could be said for the rough pulpwood except for the extremely active work of pine bark beetles. Their tunneling activity, it is well known, encourages the rapid penetration of wood destroying fungi and also increases wood loss during debarking. The question then arises: How many dollars are lost annually to beetles in piles of round pulpwood stored in the South?

Rough pine roundwood exhibited a possible three to four per cent decrease in specific gravity. And it is

Figure 2: Cribbed chips in Louisiana used for testing effects of outside storage on resultant pulp quality.

Figure 3: Rick-piled rough and peeled pine pulpwood compared with chips in outside storage (Louisiana).

Figure 4: Chips in Texas pile, placed directly on ground, displayed no more than minor deterioration over the summer months.

continue to be handled by Jones

noted, this loss does not include the wood lost due to the activity of the wood boring insects.

TEXAS

One company is awaiting the test results of a second pile after experiencing some reasonably favorable results from storage of chips for six months duration. A four-month storage period displayed no more than minor deterioration of the chips.

During the last two weeks in July, 1958, this company transferred 350 tons of purchased pine chips (140 chip units) to its experimental outside chip storage pile. Chips were unloaded from open gondola cars by a crane. Chip compaction in the pile was calculated to be 204 cu. ft. per chip unit. Last February, after 28 weeks in storage the chips were reclaimed and pulped.

Pile Design

The pile to be seen in Figure 4 measured 78.5 feet in length, 20.4 feet in height, and 51.5 feet in width. The top ridge of the pile is approximately 27 feet long. Angle of repose of the chips is 45°. The pile was built directly on the ground. The following data was accrued:

Pile temperature and rainfall. Eight thermocouples located throughout the pile enabled collection of temperatures over a 24-week period. The highest temperature recorded was 114°F. This was on July 31. In the following two weeks, temperatures remained nearly level. After a month's time, temperatures within the pile fell to the 98-102°F. range. By January 1959, 50°F. readings were prevalent. The lowest on record 32°F., was recorded on January 22nd. Rainfall during the test period totaled 26.37 inches.

Specific Gravity. The following table shows changes in dry wood weight over the 24-week period:

Weeks In Storage	Test Sample	Dry Wood Weight lbs./cu. ft.	Control Sample lbs./cu. ft.
12 weeks	Outer Layer	29.86	29.93
12 weeks	Pile Composite	28.03	29.93
16 weeks	Pile Composite	27.64	None
24 weeks	Outer Layer	28.26	29.67
24 weeks	Pile Composite	28.34	29.67

Note: Control samples were safeguarded by placement in cold storage

After 24 weeks, a loss of 4.9 per cent in density was noted. However, this loss may be attributable to inherent variations in density that occur between different samples rather than loss due to effects of storage.

Microorganism Incidence. On November 16, samples of chips from the pile were submitted to the Southern Forest Experiment Station for identification of fungi and mold. The most prevalent microorganism was found to be the sap stain Ceratocystis piliferum. This organism, however, is not detrimental to pulp yield or strength but may have some influence in bleaching. Chips of an extremely high moisture content do not stain highly and it is for this reason that chips from the interior of the pile were not affected. Some Trichoderma and Penicillum molds were found. These organisms have little if any effect upon pulp yield. It is to be noted that temperatures in excess of 95°F. inhibit both the blue stain and the decay fungi which attacks pine pulpwood. In addition, it appears that high moisture content and bacteria should hinder the development of stain decay.

Laboratory Pulping. Unbleached pulp showed a decrease in Mullen of three to four per cent, a decrease in tear of six to nine per cent and a decrease in fold of 15-25 per cent after 20 weeks of storage. In the light of this and other laboratory tests it was decided to pulp the whole pile of chips on a mill scale to determine the quality of pulp produced under mill conditions. So after 28 weeks in storage the chip pile was recovered and pulped in this manner.

Mill Run Pulping

Cooking Conditions. The chips going to the digesters were found to average about ten per cent higher moisture content than the normal mill chips. Apparently, this higher moisture content is a factor in the more rapid pulping of the chips. It was necessary to reduce cooking time from the normal 150 minutes to 140 minutes. However, the pulp produced had a hardness of one to two points higher than desired range for mill pulp.

Washing and Screening. According to pulp mill personnel the pulp handled well in these areas in view of the higher hardness.

Bleaching. The first stage required more chlorine than usual and the residual was down. Both the second and fourth stages required more bleach than usual. This increase in chemical was understandable, however, in view of the higher hardness.

Viscosity. It was significant to note that the viscosity of the experimental pulp was about 25 per cent higher than that of the control. This indicates a stronger cellulose fiber. Explanation may be in the reasoning that the cooking alkali is better able to penetrate wet chips with less damage to the cellulose fiber.

Strength. Average Mullen was 16 per cent lower than the control. Maximum Mullen was 11 per cent lower. Average tear and maximum tear were comparable to control. There was a loss in the M.I.T. fold but this was probably due to the hardness of the experimental pulp.

At the moment, it is difficult to ascertain whether the differences in quality between the experimental and the normal mill run pulps are due to effects of storage or to differences in the wood.

To determine which of these two causes may be true, another test pile of chips was recently built. At the same time, a portion of these chips were pulped on a mill run scale. This provided a control sample for comparison against a mill scale run of chips that will be reclaimed after a period of storage.

SUMMARY

With mounting evidence that little wood deterioration takes place during summer storage, pine chip piles may soon make their appearance throughout the South. The first piles will probably consist of chips purchased from sawmills and other wood-using plants. Later may come the gradual change over to mill storage in chip form—chips largely manufactured from rough roundwood transported to the mill.

Already, one small Southern building board mill has successfully operated for the past year a well-planned outside chip storage system. Maximum storage capacity is 300 chip units, and the pneumatic system is rated to handle 14 chip units per hour. Experience to date points up a substantial savings in manpower requirements and equipment operating and maintenance costs. In fact, a 50 per cent reduction of previous woodyard storage and handling costs is being experienced. In addition, the chip storage and handling area displays a neat and orderly appearance, in contrast to conditions found in many Southern mill woodyards.

the new office will be managed by lished an Air Systems department

PJT NEWS OF SUPPLIERS

Richard Sherman

W. R. Ebersold

J. G. Longstreth

J. A. Putnam

Cameron Machine Co., Dover, N. J., manufacturer of slitting and roll winding machinery, has announced two changes in sales territorial coverage.

Richard Sherman, who has been Cameron's representative in the metropolitan New York area, will now also cover New Jersey and Connecticut. Mr. Sherman has been associated with Cameron for several years.

W. R. Ebersold has been appointed representative for the middle Atlantic states, including Pennsylvania, Maryland, Delaware, West Virginia and Virginia. Mr. Ebersold was formerly associated with Gaylord Container Corp., division of Crown Zellerbach Corp.

Diamond Alkali Co.'s Electro Chemicals division announces the realignment of responsibilities involving three key personnel.

John H. Fonner, Jr., transfers from Diamond's Muscle Shoals, Ala., plant to the Edgewood, Md., plant as assistant plant manager.

Erich G. Schlaile moves from the Edgewood plant to Diamond's Deer Park, Tex., plant as a process engineer.

Robert S. Stark also transfers from the Edgewood plant to the Research and Development department at Painesville, Ohio.

Mr. Fonner joined Diamond five years ago as a plant chemist at Muscle Shoals. Mr. Schlaile also joined Diamond five years ago as production control supervisor at Diamond's Edgewood plant. Mr. Stark joined Diamond in September 1933 as a group leader at the Painesville plant. His long experience with Diamond during the past quarter century has been in supervisory capacities in the electro chemicals field.

U. S. Industrial Chemical Co., Division of National Distillers and Chemical Corp., has named Joseph G. Longstreth manager of the St. Louis, Mo., sales office. Mr. Longstreth will report to Roy Parker, manager of the U. S. I. Kansas City sales division.

Mr. Longstreth has been a sales representative for the company in the St. Louis area since he joined U. S. I. in 1955. He was born in St. Louis and is a graduate of Washington University where he obtained an A.B. degree in chemistry and zoology.

U. S. Industrial Chemicals Co., also announces appointment of John A. Putnam as manager of its Atlanta office.

Mr. Putnam has been a salesman operating out of the U.S.I. New Orleans Sales Division since 1952 and has been located in Atlanta for the past two years. He received his college training at the University of Michigan.

E. D. Jones Corp., Pittsfield, Mass., a member of the Beloit group, announces the acquisition of the complete North American assets of the Sveen-Pedersen Sales Corp. of Long Island City, N. Y.

Sveen-Pedersen Corp., founded in 1951, has directed the sales, engineering and manufacturing of Sveen-Pedersen Flotation Savealls in the United States. Since its introduction to the U. S. paper mills in 1938 the Sveen-Pedersen Saveall has become universally accepted in the paper industry as a leader in white water clarification and stock reclamation. Effective immediately, Jones will supervise sales and service of Sveen-Pedersen Flotation Savealls in the United States, Canada and Mexico. In Canada Sveen-Pedersen units will continue to be handled by Jones Canadian affiliates, Alexander Fleck, Ltd., Ottawa.

The addition of the Sveen-Pedersen Flotation Saveall to the established Jones Vacuum Saveall provides E. D. Jones with a complete line of Saveall equipment for the paper industry.

Present plans call for continued development of the Flotation Saveall with particular emphasis on industrial applications.

The Sveen-Pedersen staff headed by Herman Berg and including Fred Myers, and John Casagrande will move into the new E. D. Jones plant in Pittsfield early in 1960. In the meantime they will continue to operate from their Long Island City offices.

Stanley Steel Strapping, division of The Stanley Works, New Britain, Conn., has appointed Arthur R. Keyes sales representative in central and northern California. He was previously sales representative in Chicago for the National Cash Register Co. for five years.

Born in Chicago, he received his early schooling in Morgan Park, Mo and later attended the University of Illinois. He served in the Navy during World War II.

A. R. Keyes

N. K. Hammer

A. E. Staley Manufacturing Co., corn and soybean processors, has named Natt K. Hammer industrial products sales manager.

Mr. Hammer, a 1941 graduate of Millikin University in .Decatur, joined Staley in 1945 as an industrial salesman. He moved up as assistant branch manager and branch manager of the company's Chicago office, served for a time as assistant manager of industrial sales and for the past year as field sales manager.

Fuller Co., Catasauqua, Pa., announces the opening of a district office in Houston, Tex., as part of a general revision and enlargement of its representation in the south and southwest.

Designed to serve the increasing demands of customers in the area,

the new office will be managed by Joseph R. Perry. For the past eight years, Mr. Perry has been sales and service engineer for Fuller Co. in the territory consisting of Southern California, Arizona, New Mexico, and West Texas.

As part of his new duties, Mr. Perry will render technical assistance on Fuller's line of pneumatic conveying systems to Power Machinery Co., a Fuller representative with headquarters in Tulsa and branch offices in Dallas, Houston and Kansas City, Mo.

The Black-Clawson Co. has established an Air Systems department for engineering and marketing its new line of high velocity air drying equipment. Formation of the specialized unit was announced by Frank Peterson, president of Black-Clawson, manufacturer of an integrated line of pulp and paper mill machinery.

"The department will function independently of our domestic pulp and paper mill machinery divisions, Black-Clawson International in England, and Black-Clawson (Canada), Ltd., but will work closely with all of them," Mr. Peterson stated. The chief product of the new department

J. D. Lynch

R. R. McKellar

is the revolutionary Black-Clawson high velocity 3-D air dryer which is answering a need long felt in the paper industry for equipment designed to speed up the drying process.

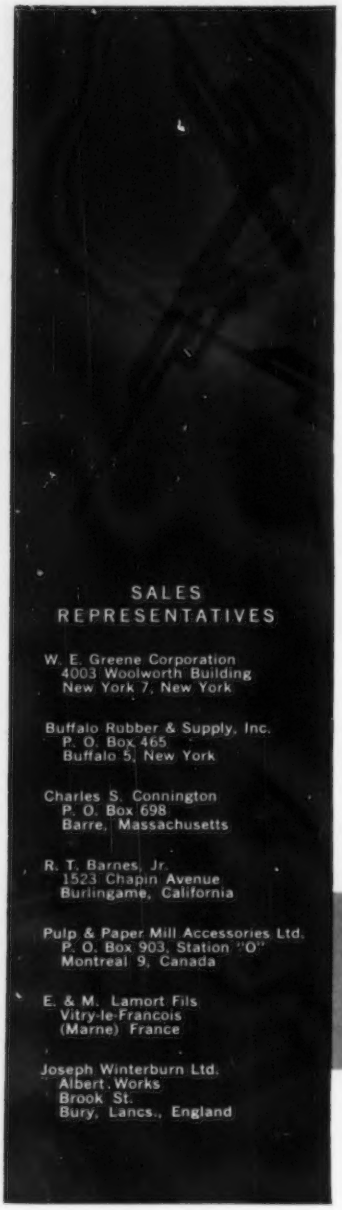
The Black-Clawson Air Systems department is under the joint direction of John D. Lynch and Robert R. McKellar and is headquartered at Fulton, N. Y., in a portion of Black-Clawson's Dilts Division plant. Mr. Lynch recently joined Black-Clawson after 12 years of engineering and sales experience in paper industry air systems. Mr. McKellar joined the company recently, and he, too, is a specialist of 11 years in air systems for pulp and paper mills.

Chain Belt Co., Milwaukee announces the merger of Carrier Conveyor Corp., the country's leading manufacturer of vibrating conveyors, and its subsidiary, General Industries, both located at 211 N. Jackson St., Louisville, Ky., with chain Belt. The merger is subject to clearance with the Internal Revenue Department as to tax consequences.

Carrier Conveyor Corp. designs and manufactures a unique line of natural frequency vibrating conveyors, feeders and related equipment for the handling and processing of bulk products. Its equipment is patented and is used in distributing and processing bulk materials such as ore, cement, chemicals, ashes, coal, sand and gravel, food and pharmaceuticals.

Robert M. Carrier, Jr., is Carrier's president and founder; John M. Morris is executive vice president; and Albert Musschoot is vice president of development and sales.

According to E. M. Rhodes, vice president of Chain Belt's industrial section, the merger of Carrier Conveyor and General Industries is being completed through an exchange of Chain Belt stock for all assets of Carrier and General Industries. "The merger with Carrier Conveyor will currently add over $3 million to Chain Belt's annual sales volume," he said. He went on to say



There's more to a Lodding Doctor than meets the eye

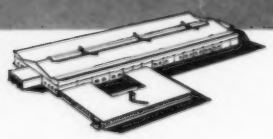
Few qualifications for manufacturing count more than experience. And when experience has been concentrated within a specialized line of endeavor it adds value to the product.

Lodding Doctors carry that extra value derived from experience — experience accumulated over thirty years of specialization in the manufacture of doctors, doctor blades, blade holders and their accessories. During this period, Lodding has built and installed doctors for every conceivable doctoring application, under all conditions and of every type and size, up to and including the Great Lakes Paper Company's 340 inch newsprint machine.

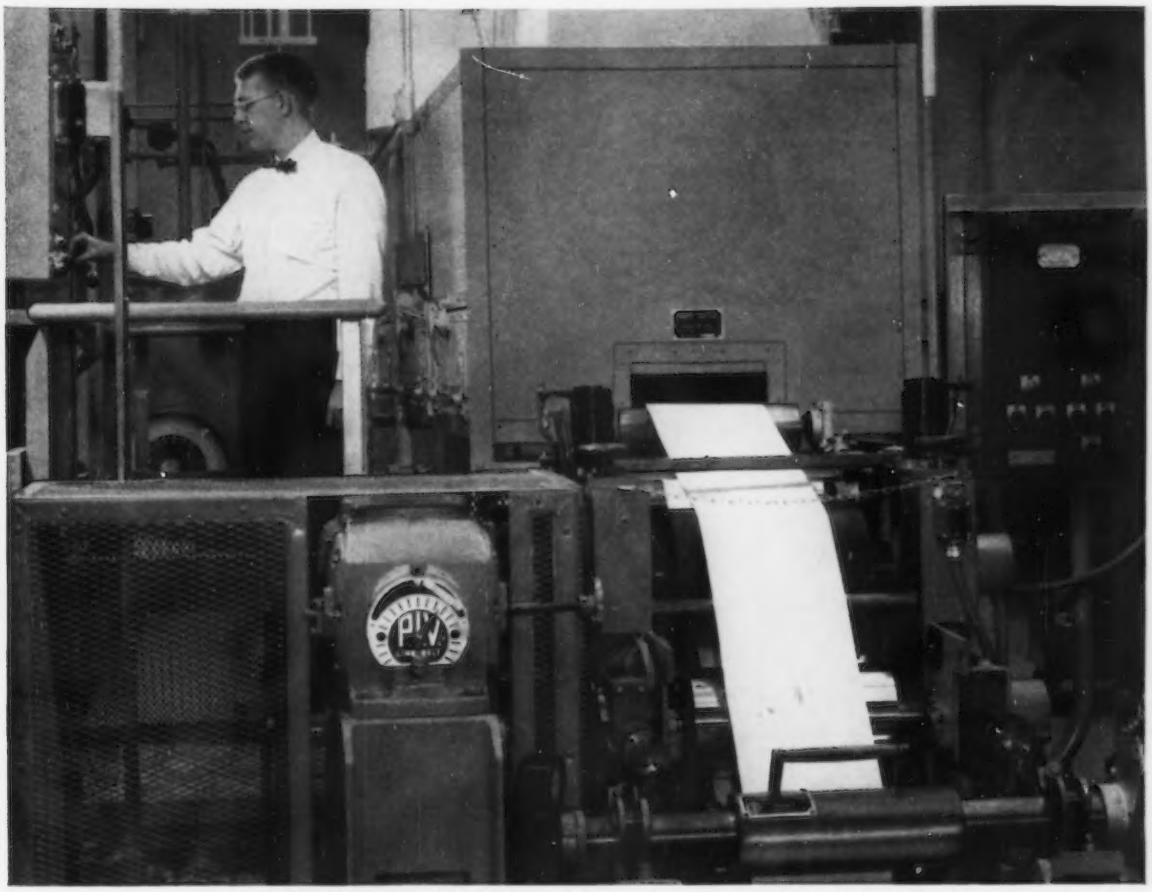
Installations of Lodding Doctors are found in nearly every paper mill in this country and in many mills abroad. Each was precision engineered and precision manufactured for the specific roll being doctored.

Doesn't it make sense to rely on specialized experience? Most mills have found that it does. Next time, get Lodding Doctors. Then you'll profit too.

LODDING
Engineering Corporation
AUBURN, MASSACHUSETTS



that "future growth of this business either Carrier's business, sales, or company also has a plant at Madison,



Du Pont's New Laboratory Paper Coater can be used to simulate most commercial coating operations.

Du Pont can show you how "Elvacet" (polyvinyl acetate emulsion) can give your paperboard excellent grease resistance

(at lower cost than laminating!)

Now with a specially designed paper coater Du Pont can show you how *on-machine* coatings of "Elvacet" 81-900 can save you the time and extra cost of laminating greaseproof paper to board. These coatings give excellent grease resistance at lower cost than laminates.

Board coated with "Elvacet" polyvinyl acetate emulsion lies flat, has little tendency to curl, gives no trouble with broke recovery. In addition, with "Elvacet" you can use conventional adhesives in fabricating cartons.

For complete details on "Elvacet" and its advantages as a grease-resistant coating for paperboard, contact the Du Pont representative nearest you. He'll answer your questions or make prompt arrangements for coating your paper at Du Pont's Sales Service Laboratory.

E. I. DU PONT DE NEMOURS & CO. (INC.), ELECTROCHEMICALS DEPT., VINYL PRODUCTS DIVISION, WILMINGTON 98, DELAWARE

DU PONT
REG. U.S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

ELVACET®
(polyvinyl acetate emulsion)

DISTRICT OFFICES: Baltimore 2, Md.—321 Fallsway • **Boston, Mass.**—45 Fourth, Waltham 54, Mass. • **Charlotte 1, N. C.**—427 W. Fourth Street • **Chicago 46, Ill.**—7250 N. Cicero Ave., Lincolnwood • **Cincinnati 2, Ohio**—2412 Carew Tower • **Cleveland 20, Ohio**—11900 Shaker Blvd. • **Dallas 21, Texas**—8510 Ambassador Row • **Detroit 35, Mich.**—13000 W. Seven Mile Rd. • **Los Angeles, Calif.**—P.O. Box 70, El Monte, Calif. • **New York 1, N.Y.**—350 Fifth Avenue • **Philadelphia, Pa.**—308 E. Lancaster Ave., Wynnewood, Pa. • **San Francisco 24, Calif.**—1485 Bayshore Blvd. • **Export Division**—Du Pont Bldg., Wilmington 98, Del.

that "future growth of this business appears favorable."

Carrier Conveyor's Louisville facilities include a 12,000 square-foot, two-story office building and a 32,000 square-foot manufacturing plant. They are located on a six-acre site. At present, Carrier Conveyor is functioning as an engineering and sales company, and General Industries is engaged in manufacturing. Mr. Rhodes said the corporation would become the Carrier Conveyor division of Chain Belt and that there are no changes contemplated in either Carrier's business, sales, or manufacturing operations.

Carrier Conveyor Corporation was started as a partnership in July, 1946, and was incorporated in Kentucky in July of 1950. General Industries was organized in November of 1954 and became a wholly-owned Carrier subsidiary August 1, 1959. All Carrier's officers will remain active in management of the new division.

The Carrier merger will give Chain Belt its second manufacturing facility in the Kentuckiana area. The company also has a plant at Madison, Indiana, approximately 46 miles from Louisville, where it manufactures a complete line of concrete road-building machinery and steel road forms. The Madison plant started manufacturing operations last January.

In addition to Madison, Ind., and Louisville, Ky., Chain Belt also has plants at Milwaukee and West Milwaukee, Wis.,; Downers Grove and Dolton, Ill.; Los Angeles, Calif.; Springfield and Worcester, Mass.; and Toronto.

CHAS. T. MAIN, INC.
ENGINEERS
PROCESS STUDIES, DESIGN, SPECIFICATIONS, CONSTRUCTION SUPERVISION
PULP AND PAPER MILLS
STEAM, HYDRAULIC AND ELECTRICAL ENGINEERING REPORTS, CONSULTATION, VALUATIONS
•
BOSTON, MASSACHUSETTS
CHARLOTTE, NORTH CAROLINA

THE WHEELER ROLL CO.
EXPERIMENTAL
PAPER and COATING MACHINES
10 inches to 30 inches wide.
Variable Speeds
WHEELER ROLL CO.
Kalamazoo

Figures of the Week

PAPER PRODUCTION RATIO REPORT—American Paper & Pulp Assn. Figures

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	Oct. 17	Oct. 24	Oct. 31	Nov. 7	Nov. 14
1959	96.9r	96.2r	97.6r	95.6r	94.1
	Oct. 18	Oct. 25	Nov. 1	Nov. 8	Nov. 15
1958	92.1	92.3	91.7	92.3	91.2

r Revised.

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1959	87.8	90.5	93.2	94.4	95.3	95.6‡	84.6‡	96.0‡	94.7‡	97.3‡	—	—	—
1958	86.9	89.5	89.5	88.4	87.2	87.2	75.3	89.6	86.5	91.6	90.4	83.1	87.1

‡ Preliminary.

COMPARATIVE YEARLY SUMMARIES

	1952	1953	1954	1955	1956	1957	1958	1959
Year to Date	90.6	93.7	92.0	95.2	100.1	91.2	86.7	92.2
Year Average	88.6	92.3	91.6	94.0	97.9	90.9	87.1	—

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available.

PAPERBOARD OPERATING RATIOS†—National Paperboard Assn. Figures

COMPARATIVE WEEKLY SUMMARIES

	Oct. 17	Oct. 24	Oct. 31	Nov. 7	Nov. 14
1959	98	94	96	94	95
	Oct. 18	Oct. 25	Nov. 1	Nov. 8	Nov. 15
1958	95	94	95	93	94

COMPARATIVE MONTHLY SUMMARIES

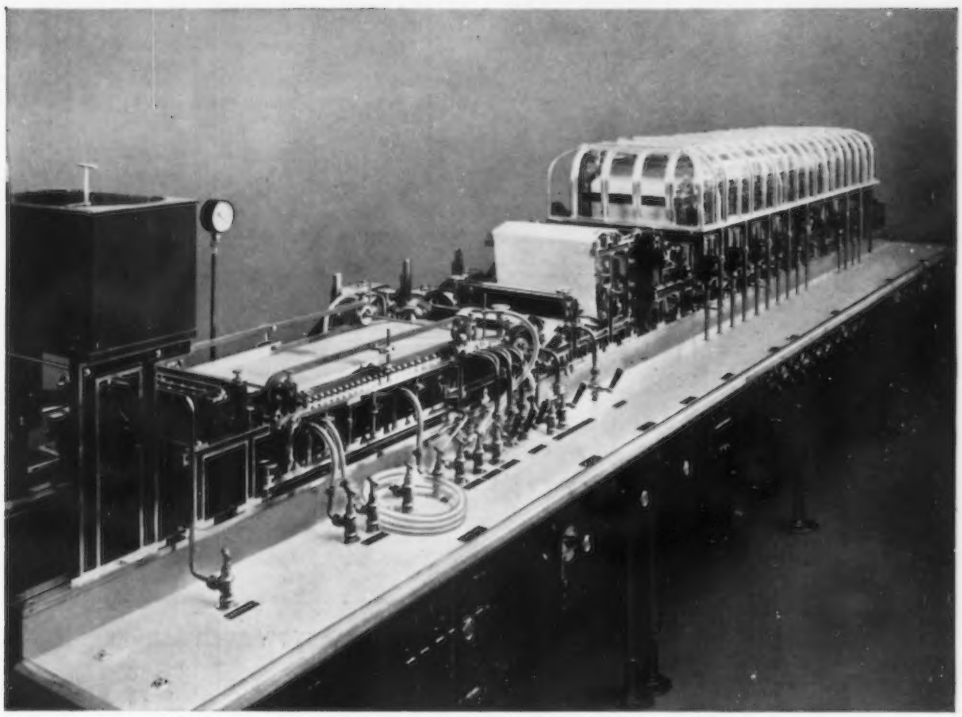
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1959	89	94	95	94	96	96	83	97	92	97	—	—	—
1958	84	86	87	84	85	86	76	93	90	95	93	77	86

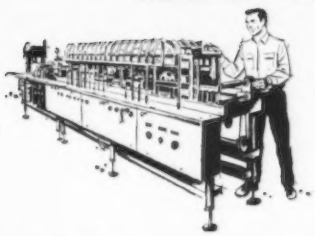
† *Per cents of operation based on "inch-hours" reported on a 6-day basis to the National Paperboard Association.*

SUMMARY OF PAPERBOARD STATISTICS—National Paperboard Assn. Figures

ITEM	THIS WEEK ENDING Nov. 14, 1959	LAST WEEK ENDING Nov. 7, 1959	CUMULATIVE TO DATE Jan. 1 to Nov. 14, 1959, incl.
% Activity	95%	94%	93%
TOTAL	331,839	319,477	14,010,162
Liner	115,512	111,626	4,876,532
Corrugating Material	54,516	52,234	2,141,370
Chip & Filler Board	4,674	4,259	224,727
Total Containerboard	174,702	168,119	7,242,629
Folding	58,332	57,326	2,503,923
Set-Up	12,189	12,600	537,086
Special Food Board	29,687	28,153	1,260,159
Other	56,929	53,279	2,466,305
Total Boxboard	157,137	151,358	6,767,473
Total Orders			
Received	304,154	361,161	
Unfilled End of Week	495,639	523,320	

GET top quality experimental paper with NEW P & W Midget Fourdrinier Paper Machine





...and keep your full-size machines producing!

This one-man midget paper machine does a giant job of experimental paper-making the world over–serves the U.S. Bureau of Standards and other government laboratories...is favored at many leading American paper plants...and finds uses in the textile and plastics industries. All-electric operation makes it safer, cleaner, simpler than ever. Install the new P & W Midget Fourdrinier to keep your heavy equipment at profitable work while one operator—using the customary temperatures and pressures—tries out many types of paper which you can later duplicate on full-size machines.

These additional features help explain its world-wide acceptance:

Paper Quality Comparable to full-size Fourdrinier products

Weight of paper 12–120 lbs

Output Up to 3.3 lbs/hr

Speed 1.6–6.5 ft/min

Overall length 13' 1"

Overall width 32"

Working width 8-3/4"

Write for full descriptive literature—today.

PARSONS & WHITTEMORE

250 Park Avenue, New York 17, New York

PULP • PAPER • PAPER-MAKING MACHINERY • GRAPHIC ARTS MACHINERY

always in the market

baltimore
chicago
detroit
jersey city
kalamazoo
los angeles
oakland
philadelphia

graders and packers of waste paper

PIONEER PAPER STOCK COMPANY

Prices of Fibers

MARKET WOOD PULP

FOURTH QUARTER CONTRACT PRICES PER SHORT AIR-DRY TON

Delivered Basis

	U.S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$ 82.50/ 90.00	$ 82.50/ 90.00	‡$90.00/ —	‡$80.00/ —	‡$90.00/ —
Bleached Gw'd	$ 97.50/100.00	$ 97.50/100.00			
Kraft, Blchd.	157.00/ —	160.00/162.50	‡157.00/162.50*		$157.50/ —
Kraft, Blchd. Hdwd.	152.00/ —		‡137.00/ —		
Kraft, Semi-bleached.	140.00/ —	140.00/ —			
Kraft, Unbl.	117.50/125.00	125.00/130.00	†125.00/130.00	125.00/ —	
Sulphite, Blchd.	155.00/ —	155.00/ —	*155.00/ —	*155.00/ —	155.00/ —
Sulphite, Bl. Hdwd.	150.00/ —				
Sulphite, Unblchd	135.00/ —	135.00/ —	†135.00/ —	*135.00/ —	
Sulphite, Unb'l. Gl'sn		140.00/ —	†134.00/ —		
Soda, Blchd.	147.00/150.00	150.00/ —			

‡ On Dock Atlantic Ports. * Freight allowed. † Varying Freight Allowances.

COTTON LINTERS

F.O.B. OIL MILLS
WEEK ENDED NOVEMBER 17

	Atlanta	Memphis	Dallas	Los Angeles
Grade 1	n.a.	n.a.	n.a.	n.a.
2	$8.00/7.50	n.a.	n.a.	$7.90/7.50
3	7.50/6.00	$8.00/7.00	$6.75/6.50	7.50/7.35
4	6.00/5.25	6.25/5.75	6.25/5.25	6.75/6.25
5	5.25/4.75	5.00/4.75	4.75/4.50	6.00/5.60
6	4.75/3.50	4.50/4.25	4.00/3.25	5.00/3.00
7	3.50/2.50	3.50/2.75	3.00/2.75	3.00/2.65

WASTE PAPER MARKET

Mill Prices, f.o.b. Trucks Shipping Point — Includes Brokerage

These quotations are a partial indication of the price range on volume tonnage in each market on the date specified, as gathered from major dealers and brokers. SPECIAL PACKINGS AND SPOT TONNAGE NOT INCLUDED. Prices nominal.

	New York	Boston	Chicago	Los Angeles
	Nov. 23	Nov. 23	Nov.	Nov.
No. 1 Mixed Paper	$ 10.00/ 12.00	12.00/ 14.00	9.00/ —	13.00/ 14.00
No. 1 News	14.00/ 15.00	14.00/ 15.00	16.00/ —	16.00/ —
Overissue News (Lg. size)	13.00/ 15.00	13.00/ 15.00	21.00/ —	19.00/ 20.00
Mill Wrappers	19.00/ 22.00	13.00/ 15.00	14.00/ —	15.00/ —
Old Corrugated Containers	24.00/ 25.00	23.50/ 24.00	21.00/ —	23.00/ —
Super Resorted Kraft Paper	35.00/ 40.00	— / —	30.00/ —	55.00/ —
New Double Kr. Ld. Corr. Cuts	35.00/ 37.50	37.50/ —	35.00/ —	35.00/ —
(Semi-chem. medium)	47.50/ —	47.50/ —	45.00/ —	36.00/ —
New 100% Kraft Corr. Cuts	40.00/ 42.50	— / —	67.50/ —	— / —
New Br. Kraft, Env. Cuts	70.00/ 75.00	70.00/ 75.00	52.50/ —	55.00/ —
New Br. Kr. Bag Waste Prntd.	55.00/ 60.00	55.00/ 60.00	52.50/ —	55.00/ —
New Br. Kr. Bag Waste Unprintd	60.00/ 65.00	65.00/ 75.00	60.00/ —	60.00/ —
No. 1 Groundwood Shvs.	25.00/ 30.00	25.00/ 30.00	24.00/ —	35.00/ —
White Newsblanks	65.00/ 70.00	53.50/ 60.00	45.00/ —	60.00/ —
No. 1 Soft White Shvs.	60.00/ 65.00	60.00/ 65.00	60.00/ —	70.00/ —
Super Soft White Shvs.	65.00/ 75.00	75.00/ 85.00	70.00/ —	— / —
Hd. White Shvs.	85.00/ 90.00	90.00/100.00	85.00/ —	95.00/ —
Hd. White Env. Cuts	100.00/105.00	105.00/110.00	90.00/ —	113.00/ —
Col. Tab. Cards	55.00/ 57.50	55.00/ 57.50	52.50/ —	42.50/ 45.00
Manila Tab. Cards	77.50/ 80.00	77.50/ 80.00	75.00/ —	70.00/ —
No. 1 Col. Ledger	40.00/ 45.00	37.50/ 42.50	47.50/ —	35.00/ —
White Ledger	60.00/ 62.50	60.00/ 65.00	57.50/ —	45.00/ —
Mixed Book & Mag.†	22.00/ 25.00	— / —	17.00/ —	— / —
No. 1 Books‡	23.00/ 25.50	17.00/ 19.00	35.00/ —	17.50/ 19.50

† Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% of groundwood.

J. E. SIRRINE COMPANY

Engineers Since 1902

Pulp & Paper Mills
Water Supply
Waste Disposal
Steam & Hydro Power Plants
Appraisals
Textile Mills & Finishing Plants
Surveys & Reports

GREENVILLE, SOUTH CAROLINA

ClO_2

GASPESIA NOW HAS CHLORINE DIOXIDE PULP!

Don't commit yourself on future orders for sulphite pulp until you've tried the *new* Gaspesia Chlorine Dioxide pulp.

This high-quality new ClO_2 pulp is now being produced in a bleach plant only six years in operation. Space was left for this Chlorine Dioxide operation in the original plant plans. Now, Gaspesia is the only North American sulphite pulp made from northeastern woods bleached in a completely modern bleach plant, utilizing chlorine dioxide.

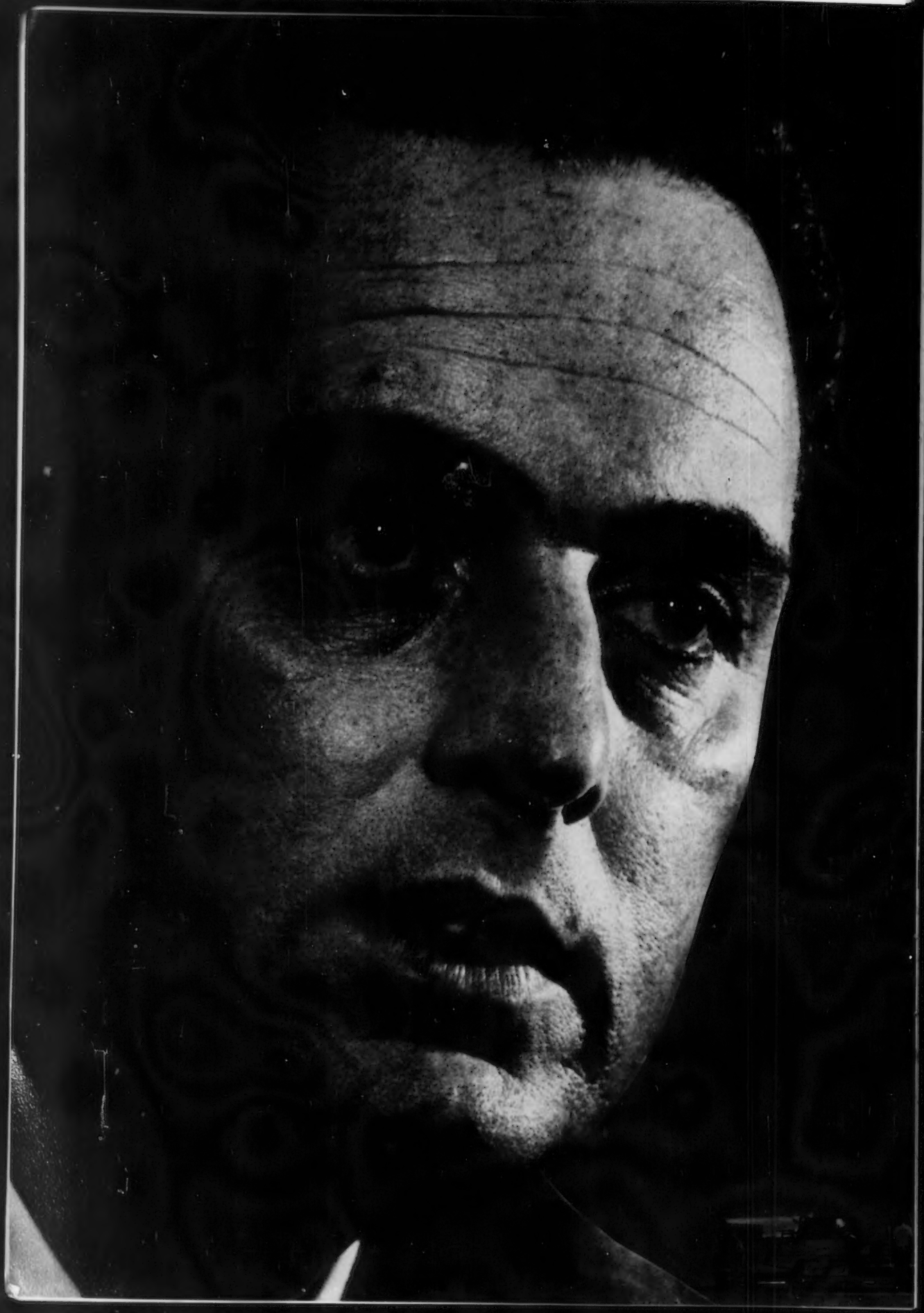
Gaspesia pulps have long been known for their excellent cleanliness, strength and good forming qualities. Now chlorine dioxide makes possible a brightness of 91 G.E.

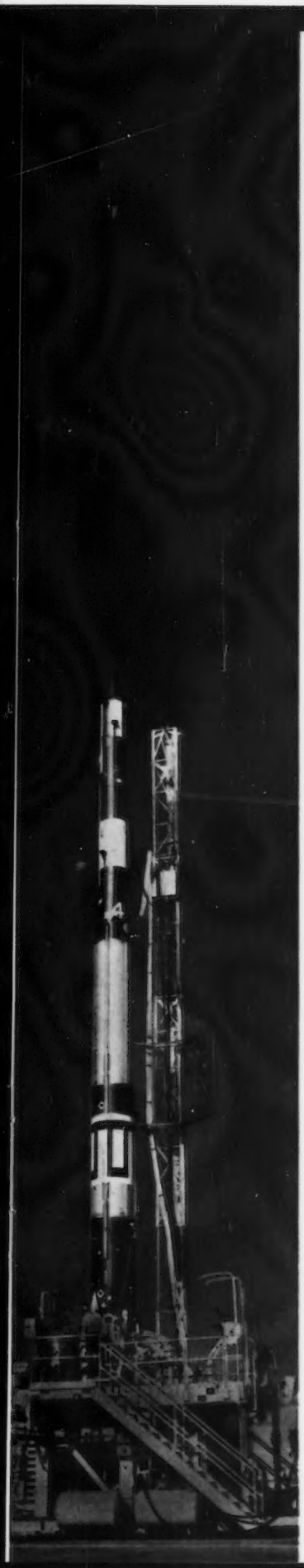
Orders for trial cars are now being accepted. We suggest you order your initial shipment today to assure a steady supply in the years ahead.

GASPESIA SULPHITE COMPANY LTD.
CHANDLER, QUEBEC, CANADA

SOLD BY: **Anglo Paper Products, Ltd.**
2055 Peel Street, Montreal 2, Quebec

SALES REPRESENTATIVES IN THE UNITED STATES:
Northeastern Paper Sales, Inc.
400 Madison Avenue, New York 17, N.Y.
20 North Wacker Drive, Chicago 6, Ill.





Clete Smith, who helped develop a special solvent formulation for flushing rocket fuel tanks, says you'll like doing business with Columbia-Southern

Technical Service Engineer Clete Smith is one of many Columbia-Southern specialists who recently teamed up to formulate a new solvent for cleaning rocket fuel tanks and other parts without damage to the special metals and alloys used in rocket construction.

Aimed at solving a specific customer problem, this product is one example of Columbia-Southern's emphasis on keeping customers' needs foremost. Throughout the company, the aim is to develop products and methods and to work closely with customers to insure the most effective use of Columbia-Southern chemicals—and service.

For example, Technical Service recommendations on vapor degreasing with Columbia-Southern Trichlor recently saved a large chain-saw manufacturer $2,100 in tank maintenance costs in just 22 weeks. And an analysis of a window-frame vapor degreasing set-up, also using Trichlor, resulted in a 30% reduction in solvent consumption.

These are just some of the reasons why so many companies in every industry find it pleasant—and profitable—to do business with Columbia-Southern. They like the extra service Columbia-Southern routinely delivers along with its quality products.

Anhydrous Ammonia, Barium Chemicals, Benzene Hexachloride, Calcium Chloride, Calcium Hypochlorite (Pittchlor®, Pittabs®), Carbon Tetrachloride, Caustic Potash, Caustic Soda, Chlorine, Chlorinated Benzenes, Chloro IPC, Chrome Chemicals, Hydrogen Peroxide, Muriatic Acid, Pacific Crystals, Perchlorethylene, Rubber Pigments (Calcene®, Hi-Sil®, Silene®), Soda Ash, Sodium Bicarbonate, Sodium Sulfate, Titanium Tetrachloride, Trichlorethylene

columbia southern

CHEMICAL CORPORATION

A Subsidiary of Pittsburgh Plate Glass Company • One Gateway Center, Pittsburgh 22, Pa.

Why Hendrick perforated plate filters best

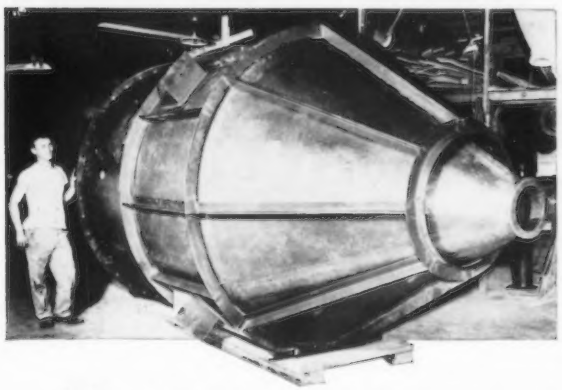
in paper and pulp production

Holes in Hendrick Perforated Plate are precision-cut to insure uniformity of mesh—and excellent draining and filtering. That's why Hendrick Plate cuts production losses due to blinding throughout the entire service life of the plate.

Hendrick Perforated Plate is furnished in commercially rolled metals and gauges to meet your specific requirements. Write for more information today.

Hendrick MANUFACTURING COMPANY
77 Dundaff Street, Carbondale, Pa.

Perforated Metal • Perforated Metal Screens • Wedge-Slot and Wedge Wire • Architectural Grilles • Mitco Open Steel Flooring • Shur-Site Treads • Armorgrids • Hendrick Hydro Dehazer • Petrochemical Column Internals



du Verre CONSTRUCTION GIVES COMPLETE CORROSION CONTROL ***. . . inside and out!***

du Verre resin bonded Fiberglass construction is the answer to corrosion-free, trouble-free mill process equipment. Ducts, Hoods, Tanks, Fans, Vessels of any description can be easily fabricated and field erected at surprisingly low cost. du Verre Construction is strong, light-weight and is offered in a wide variety of resin formulations.

Unlike coatings or linings, du Verre resin bonded Fiberglass is homogeneous in structure giving complete protection inside and out. Painting and maintenance are not required.

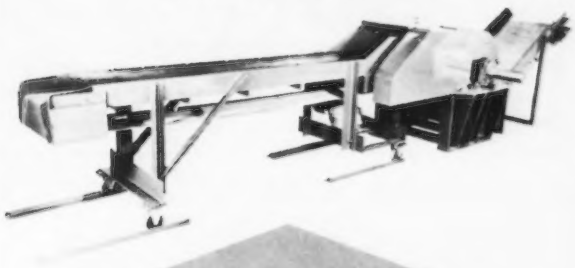
Eliminate rust, corrosion and contamination in your mill. Investigate du Verre Construction for your process equipment. Write for your free copy of Bulletin No. 100.

du Verre Inc.

duVerre, Incorporated
Box No. 37-E • Arcade, N.Y.

OVERLOAD THEM! TREAT THEM ROUGH!

TAYLOR-STILES RAG CUTTERS ARE RUGGED AND CAN "TAKE IT"!



Taylor-Stiles Rag Cutters have a reputation for being able to "take it". They can be loaded with rags to the top of the trough and will cut hour after hour 24 hours a day—week in and week out.

They can take it in other ways too. Taylor-Stiles Rag Cutters have cut umbrella handles, files and coins, even railroad spikes—and, in one instance, an automobile differential, all without serious damage to the machine.

For complete details, write for Technical Bulletin #214

TAYLOR, STILES & CO.
10 BRIDGE STREET
RIEGELSVILLE, NEW JERSEY

Please send me Technical Bulletin #214 describing illustrating Taylor-Stiles Rag Cutters.

Name_____

Company_____

Street_____

City_____ Zone_____ State_____

A COMPLETE LINE OF AUTOMATIC WEB GUIDING EQUIPMENT

WRITE FOR CATALOG

• FIFE • MANUFACTURING Company
INCORPORATED

P. O. BOX 9815 OKLAHOMA CITY 18, OKLAHOMA

INSTRUMENTS & CONTROLS for . . .

Bleach Plants • Digesters • Evaporators • Lime Kilns • Paper Machines • Chemical Recovery Stock Preparation • Water Treatment

Specialists in application of complete control systems

DISTRICT OFFICES IN Atlanta • Boston • Buffalo Charlotte • Chicago • Cincinnati • Cleveland • Dallas Denver • Detroit • Houston • Kansas City • Los Angeles Memphis • Milwaukee • New Orleans • New York Philadelphia • Pittsburgh • St. Louis • St. Paul • San Francisco • Schenectady • Seattle.

Pulp and paper division

BAILEY METER COMPANY

1056 IVANHOE RD. • CLEVELAND 10, OHIO

In Canada—Bailey Meter Company Limited, Montreal

University of Maine Lectures on Pulp and Paper Manufacture

SERIES NO. 2

A Valuable Textbook for the Paper Industry

Embracing the Complete Lectures as given at the University of Maine.

Three hundred and seventy-three pages and an additional 4-page colored insert of up-to-date material covering a broad field in both pulp and paper making and including many fine illustrations and diagrams.

For students expecting to enter the industry who wish to increase their knowledge and improve their positions, this textbook offers a complete education in pulp and paper manufacture.

For executives, superintendents, chemists, engineers and others whose knowledge of the industry is more comprehensive, this textbook will be invaluable as a reference for providing figures, process details, etc.

LOCKWOOD TRADE JOURNAL CO., Inc.
49 West 45th Street, New York 36, N. Y.

Send postage prepaid, Remittance with order. . . . copies of UNIVERSITY OF MAINE LECTURES, bound in Cloth at $5.00 per copy.

All New York City Orders are Subject to a City Sales Tax

Name .....

Street ..... *City and State* .....

. . . ., 19..... *Ordered by* ... .

ELIXMAN CORES CAPS

Straight wound paper cores made in sizes from 2" to 10" inside diameter with any thickness wall required.

Long draw protected slot caps of heavy gauge steel in all standard sizes.

Heavy duty caps with reenforced square hole. This patented feature of reenforcement gives added strength and durability.

Samples of caps or cores will be gladly submitted

ELIXMAN PAPER CORE COMPANY, INC.
CORINTH, N. Y.

Another Plant To Serve You

SHIP US IN KALAMAZOO

PACKING PLANTS
CHICAGO, ILL.
WASHINGTON, D. C.
CAMDEN, N. J.
KALAMAZOO, MICH.
LOUISVILLE, KY.

THOMAS PAPER STOCK CO.
1500 N. Hooker St. MO-4-5700 Chicago 22, Ill.

Help Wanted

Help Wanted

BARGAINS
IMMEDIATE DELIVERY

PAPER TRADE JOURNAL CLEARING HOUSE

HELP WANTED—$1.25 a line. Minimum charge $5.00.
SITUATIONS WANTED—$1.25 a line. Minimum charge $5.00. If repeated ½ rate will be charged for each consecutive repetition.
FOR SALE—$1.25 a line. Minimum charge $5.00.
WANTED—$1.25 a line. Minimum charge $5.00.
OPPORTUNITIES—$1.25 a line. Minimum charge $5.00.

Classified advertising space may also be purchased at $7.00 per single column inch. All classified advertisements are payable in advance.
If box number is used—75 cents additional
Address replies to advertisements appearing under Box Number in care of PAPER TRADE JOURNAL, 49 West 45th Street, New York 18, N. Y.

Help Wanted

Help Wanted

Help Wanted

PAPER MEN

$5,000 to $50,000

SALES • PRODUCTION • TECHNICAL

Finding and landing THE ONE BEST JOB requires sound analysis, careful planning, proper contacts and skillful negotiation.

Paper men ourselves, and the only recognized professional specialists in the world in our particular field, we assist responsible paper men to accelerate their careers by uncovering and developing THE SPECIFIC SITUATION that most exactly fits the needs of each individual we serve.

If you seek to better yourself, and your performance to date entitles you to our endorsement, we can and will help you. Contact us in absolute confidence for information regarding procedure.

GEO. M. SUNDAY & ASSO.

PERSONNEL CONSULTANTS TO THE PULP, PAPER & ALLIED INDUSTRIES

6 East Monroe, Chicago ANdover 3-1970

PRODUCTION MANAGER
TECHNICAL DIRECTOR
and other senior staff

required by

a well designed and located, first class, versatile one machine

FINE PAPER MILL

now under construction at New Westminster, British Columbia

If you would like to be a part of this operation right from the start, and grow with it, you are invited to write now in strictest confidence and fullest detail to the:

Fine Paper Division

POWELL RIVER COMPANY LIMITED

Standard Building, Vancouver 13, British Columbia

N-30

SALES ENGINEER

Prefer mechanical engineering graduate with paper mill experience, under age 35. This is an excellent opportunity with a progressive manufacturer of paper making machinery. Midwest location. Address Box 59-321 care Paper Trade Journal.

D-7

PROCESS ENGINEER

Consolidated Water Power & Paper Company is considering applications for the position of Process Engineer.

Our Process Engineers are part of the mill technical staff and operate as an integral part of production on problems involving quality control, wastes and efficiencies. These Engineers are assigned to specific areas in the mill such as Groundwood Pulping, Stock Blending, Papermaking and Coating, and are expected to provide guidance and technical advice to the operating personnel.

This Process Engineer should have an educational background in Paper Technology, Chemistry, or Chemical Engineering.

Two or three years experience in Process Engineering or mill technical service work in Groundwood Pulping, Chemical Pulping, and/or wet-end machine trials is necessary.

This position is located in Central Wisconsin.

Please send resume and application for interview to L. J. Barrette, Director of Personnel & Labor Relations, Consolidated Water Power & Paper Company, Wisconsin Rapids, Wisconsin.

D-7

GRADUATE MECHANICAL ENGINEER WITH KNOWLEDGE OF ELECTRICAL AND STEAM EQUIPMENT TO HEAD MECHANICAL AND ELECTRICAL, POWER AND MAINTENANCE DEPARTMENTS. APPLICANT MUST HAVE EXPERIENCE IN ALL PHASES OF PAPER MILL ENGINEERING (PLANT ENGINEERING, POWER PLANT, MAINTENANCE, ETC.)
ADDRESS BOX 59-315 CARE PAPER TRADE JOURNAL. N-30

FOR SALE

FOR SALE

FOR SALE

Help Wanted

DESIGN PROJECT ENGINEERS

Outstanding opportunity for qualified Mechanical Engineers to have complete responsibility for major projects involving the design and development of equipment for the Pulp & Paper Industry.

Excellent facilities provided in new research building including fully equipped pilot plant and laboratory.

PULP AND PAPER RESEARCH CENTRE, INC.
G. H. de Reus, Chief Engineer
P. O. Box 780, Lawrence, Mass. N-30

PROJECT ENGINEERS
SALES ENGINEERS

Waldron-Hartig Division
Midland-Ross Corporation

If you have experience in machine design and know the field of paper converting you can turn your ideas into results at our Waldron-Hartig Division in New Brunswick, New Jersey. You will take charge of interesting, challenging design projects and supervise competent personnel. Your responsibility will extend from establishing or interpreting the initial specifications to successful operation of the equipment in the field.

We are also looking for experienced Sales Engineers in the field of paper converting.

Please send resume and salary requirements to:

D. M. Sannit
Executive Offices
Midland-Ross Corporation
2000 Illuminating Building
Cleveland 13, Ohio
N-30

SALES REPRESENTATIVE WANTED for pulp Paper Machine Clothing also Chipper and all other Mechanical Knives. Must have established contacts with Superintendents. Liberal commission basis. State desired territory. Address Box 59-331 care Paper Trade Journal. N-30

LOOK through the columns of the CLEARING HOUSE

Help Wanted

KRAFT PAPER MILL MANAGER

Mature, experienced specialty kraft paper maker with technical education or equivalent background wanted to manage high quality 2-machine Midwestern kraft paper mill located near a large city. Mill uses 100% purchased pulp, mostly Scandinavian.

He should be able to operate virtually independently with a minimum of supervision. This is an outstanding opportunity for the correct man. Remuneration, including pension and fringe benefits, depend upon experience and potential. All replies will be held confidential.

Please send full particulars including age, education, past and present experience, grades run and any other appropriate data to

Address Box 59-296 care Paper Trade Journal. N-30

MECHANICAL ENGINEER

Mechanical Engineer required for an expanding Pulp and Paper Mill. Preference given to a graduate with experience in this field. Salary commensurate with experience. Full details as to age, marital status, education and experience should be sent to Personnel Supervisor, the KVP Company Limited, Espanola, Ontario. D-6

Situations Wanted

AVAILABLE
MILL MANAGER

Experienced in manufacture of Writing, Printing and Specialty Grades; also Pulps.

Will take complete charge of mill and operate at a profit.

Over 20 years of experience.
Address Box 59-000 care Paper Trade Journal. D-21

BARGAINS
IMMEDIATE DELIVERY

1—86" Farrel 8-Roll Calender Stack. A. F. Bearings. Full set of Doctors.
1—8" Pusey & Jones 7-Roll Calender Stack.
1—30" Dia. x 130" Face Farrel Roll Grinder., Complete.
1—5' x 86" Pusey & Jones Yankee Dryer.
1—92" Langston Winder equipped with both score and shear cut slitter devices.
1—86" Warren Winder Complete. Recently rebuilt with new drums and new A. F. Bearings and Housings.
1—110" Pusey & Jones 2-Drum Winder. A.F. Bearings.
1—84" Kamyr Machine. 75 Ton per day.
10—48" x 150" Pusey & Jones Dryers.
7—36" & 72" Pusey & Jones Dryers.
1—E. D. Jones Majestic Jordon No. A-482. S.S. Fillings.
1—74" Seybold Trimmer & Cutter Z-12.
1—45" Seybold Trimmer & Cutter with 5 H.P. 220/440 Volt Motor. Rebuilt.
1—42" Dia. & 110" Face Pope Reel.
1—25" Dia. x 156" Perforated Face Sandusky Suction Couch. Complete.
1—22" Dia. x 138" Perforated Face Sandusky Suction Couch. Complete.
1—22" x 111" Vertical Size Press with Microrock and Rubber Rolls. A. F. Bearings with frame work. Pneumatically loaded.
1—24" x 102" Extractor Rolls. 20" Dia. Rubber Top Roll mounted with A. F. Bearings and Frame work. Spare Rolls.
1—22" x 96" First Press with Microrock Roll and Rubber Roll.
1—22" x 110" Press with Microrock Roll and Rubber Roll.
1—10-Knife Carthage Chipper with A. F. Bearings.
1—A.P.P. Rotary Centrifugal Pulp Screen, 40" Dia. x 42" Face, Serial #1274227.
1—#3A Bird Screen. S.S. Plates.
1—Hudson Sharpe Toilet Tissue Converting Machine, Serial #2123.
2—Packer 12-Plate Flat Screens. S.S. Bodies #.22 S.S. Plates. Less than 5 Years Old.
1—36" x 96" Saveall, Rubber Couch, S.S. Vat, A.F. Bearings.
1—Hummer Vibrating Screen.
1—Seybold Knife Grinder. Size G. 84" Table. Serial #4X802.
1—Sandy Hill Sulphur Burner. Complete.
1—54" Dia. x 48" Face Valley Iron Tub Beater.
1—53" Dia. x 66" Face Dilts 2000-lb. Iron Tub Beater with S.S. Hood.
16—Beater Rolls and Stands. Various Sizes.
5—Triplex and Duplex Pumps. Various Sizes.
1—DeZurick Consistency Regulator. Complete. One year old, never used.
1—8' x 10' Oliver Continuous Filter. Steel Tub.
1—100 H.P. Terry Turbine, Type G, 3615 RPM, 250 lbs. Steam Pressure. Back Pressure 35 lbs. Fully automatic with Terry Speed Reducer.
1—No. 2 Jones Pulper. A.F. Bearings. Spare Worm.
1—250 H.P. Ingersoll-Rand Diesel Engine Generator Set—G.E. Generator, 150 KW, 480 Volts, 720 RPM.
3—75 KVA G.E. Spirakore Transformers, Type HS, Class OA, 2400/4160 Y Primary to 120/240 Secondary.
1—60 H.P. G.E. Gear Motor, T.E.F.C. 440 Volts, 1730 Max./427 Min. RPM, 4.15 to 1 Ratio.
1—15 H.P. West. Gear Motor, T.E.F.C. 220 Volts, 87 RPM.
1—7½ H.P. West. Gear Motor, T.E.F.C. 550 Volts, 1165 RPM to 29 RPM.
1—7½ H.P. G.E. Gear Motor, T.E.F.C. 220/440 Volts, 1738 RPM, 9.2 to 1 Ratio.
1—Horton Clutch, AF. Bearings.
1000 Electric Motors from ¼ H.P. to 600 H.P. in Stock

The above is but a small part of the inventory we carry. We can furnish you with almost anything in the line of paper mill, electrical and machine shop equipment.

Write—Wire—Phone For Your Needs

RUDERMAN MACHINERY EXCHANGE
GOUVERNEUR, NEW YORK
Telephone 333-324 TF

Situations Wanted

EXECUTIVE - WORK MANAGER

For Sale

Wanted

WANTED

ROSS PAPER MACHINERY CO.

USED PAPER MAKING AND CONVERTING MACHINERY

265 PASSAIC STREET · NEWARK 4, NEW JERSEY · Humboldt 2-2177

Cable Address: "JACKROSS Newark, NJer"

IN CANADA: ROSS PAPER MACHINERY LTD., 199 BAY STREET, TORONTO 1, ONTARIO, EMpire 4-5041

QUALITY GUARANTEED MACHINERY ERECTED FOR YOUR INSPECTION

CALENDER STACKS

1— 58″ M & W 9 roll
1— 66″ M & W 5 roll
1— 80″ P & J 7 roll; heavy duty
1— 82″ Lobdell 5 roll
1— 86″ Lobdell 5 roll
1—115″ B-C 7 roll
2—124″ Downingtown 5 roll & 6 roll
1—128″ Downingtown 7 roll

CHIPPERS

1— 88″ Murray 10 knife w/600 hp motor
1— 96″ Murray 6 knife; A-F Brng.

COATERS

1— 24″ Waldron Coater & Embosser
2— 38″ Waldron Reverse Roll Coater w/drive
3— 54″, 65″, & 76″ Mayers

COMPLETE MACHINES

3—Sandy Hill 81″ trim single cyl. Tissue
1—M & W 3 cyl. 50″ trim Board Mill complete
1—M & W 72″ Fourdrinier paper machine

CYLINDER MOLDS

2— 63″ face x 36″ dia w/rubber couches
1—104″ face x 36″ dia
1—107″ face x 48″ dia; A-F Brng
2—111″ face x 36″ dia; A-F Brng
1—132″ face x 42″ dia; A-F Brng
1—136″ face x 54″ dia; SS covering

CYLINDER WET ENDS

Downingtown single cylinder; 99″ face x 48″ dia.; 18″ dia. couch

DRYERS—HYDROSTATICALLY TESTED

24″ Dia.:

38—46″ face; Chrome plated
1—156″ face w/gear and steam joint

28″ Dia.:

3— 70″ face w/gears & bearings
3— 73″ face w/gears & bearings
3— 76″ face w/gears & bearings
3— 77″ face w/gears & bearings
2— 84″ face
2— 84″ face w/accessories

36″ Dia.:

1— 42″ face
2— 44″ face
2— 46″ face
22— 54″ face; complete section
4— 70″ face w/gears & bearings
11— 72″ face w/gears & bearings
1— 74″ face Lukenweld w/A-F Brng
1— 74″ face w/gears & bearings
3— 75″ face w/gears & bearings
9— 76″ face w/gears & bearings
1— 77″ face w/gears & bearings
1— 78″ face w/gears & bearings
2— 80″ face
5— 84″ face
3— 88″ face
18— 90″ face; complete section
1—138″ face
10—160″ face

42″ Dia.:

24—102″ face; complete section
1—106″ face
1—110″ face
40—118″ face; complete section
1—120″ face
1—160″ face

48″ Dia.:

57— 46″ face; chrome plated
1— 52″ face w/gears & bearings
1— 82″ face w/gears & bearings
24—110″ face w/frames & bearings
10—123″ face w/gears, frames & bearings
1—128″ face
12— 82″ face
5— 84″ face

DRIVES—ENCLOSED RIGHT ANGLE

1—Michigan 92½ h.p. ratio 10.1 to 1
1—50 h.p. Reliance VS with MG set & controls; 850-1200 r.p.m.
1—Beloit 65 h.p. Ratio 2.88 to 1
1—Phila. 28 h.p. Ratio 10.56 to 1

EMBOSSERS

1— 80″ Hudson Sharp; A-F Brng
2— 62″ Textile Machinery Co; w/drives

FILTERS—STEEL VATS

1—New Oliver 7′ dia American 7 disc; all SS; Reliance Drive
1— 5′ face x 3′ dia Dorr-Oliver
1— 10′ face x 8′ dia Oliver chem. sludge filter

FLAT SCREENS

2— 12 Plate IMPCO w/Dunbar Drives
1— 4 plate Tailing Screen

INLETS & HEADBOXES

1—112″ Valley w/8″ distributing roll

JORDANS

2—B-C #00; like new
2—Appleton #1 w/A-F Brng
3—Emerson #1 w/125 hp motors
1—Emerson #2 w/150 hp motor
1—N & W Ponv w/75 h.p. motors
1—Horne w/AF Brngs

MOTORS 3 PH 60 CYCLE

1—100 hp GE; 440 v; 695 rpm
2—100 hp GE; 440 v; 430 rpm
1—350 hp GE; 2200 v; 720 rpm: Synch

PAPER MACHINES DRIVES

1—GE 65 hp shunt wound DC motor w/75 hp AC motor, MG set & excitor
1—De Laval 100 h.p. steam turbine w/reducers

PULPER

1—Dilts 16 ft. complete w/125 h.p. motor, elec. hoist & oil pump

PUMPS—OPEN IMPELLER

1—Shartle 8 x 16 Triplex
23—Centrifugal Stock and Water Pumps

REELS

1— 36″ Kohler Automatic 2 arm unwind reel
1—100″ Kohler automatic two arm unwind reel; 60″ dia rolls; new condition
1—116″ Downingtown two bowl A/F Brngs
1—123″ Beloit—2 bowl
1—150″ B & S pope type w/Reliance drive

REFINERS

1—#1 Dilts Hydrafiner
2—#1 Claflin; A-F Brng
2—#4 Dilts Hydrafiners
1—24″ Bauer Double Disc w/two 50 h.p. motors
1—24″ Downingtown Weiner; new

ROLL GRINDERS

1—124″ x 30″ Farrel w/crowning device
1—208″ x 32″ Farrel w/crowning device

ROLLS

Distributor—Stainless Steel

2— 8″ dia. x 115″ face
1— 6½″ dia. x 115″ face

Couch—Rubber Covered

1—16″ dia. x 96″ face
1—18″ dia. x 108″ face
2—16″ dia. x 65″ face

Press—Rubber or Brass Covered

71 Miscellaneous sizes. Drawings available

Felt—Steel

335 Miscellaneous sizes. Drawings available

Calender—Chilled Iron

72 Miscellaneous sizes. Drawings available

ROTARY SCREENS

8—Bird #3A, Model 100 w/SS or copper vats
1—Jones Leithwalk copper lined

SAVEALL

1—100″ face x 48″ dia. Shartle w/steel vat, A-F Brng & motor drive

SHEETERS—DOUBLE KNIFE

1— 64″ Dillon
1— 80″ B-C heavy duty board model
1—157″ Masson-Scott; like new

SHEETERS-SINGLE KNIFE

1— 36″ Beck w/layboys & backstand
5— 56″, 60″, 66″, & 70″ Hamblets w/backstands
1— 65″ Kidder w/elec. eye and layboy
3— 80″ & 82″ Hamblets w/backstands & layboys
2— 82″ Hamblet w/layboy
1—105″ Hamblet
1—110″ Hamblet w/layboy
1—112″ Hamblet Heavy duty, roller bearing, w/layboy, backstand, monorail, etc. New 1954

SLITTERS AND WINDERS

18″ Maximum Rewind Diameter

1— 72″ Cameron Type 26-3 A Duplex

24″ Maximum Rewind Diameter

1— 32″ Cameron Type 6
3— 42″ Cameron Type 6
1— 42″ Cameron Type 6 Shear Cut
2— 48″ Langston Duplex Shear Cut
2— 52″ Cameron Type 6
2— 62″ Cameron Type 8
1— 72″ Cameron Type 9-5

30″ Maximum Rewind Diameter

1— 42″ Essex Duplex Shear Cut; A-F Brng
1— 42″ Cameron Type 28-3 Duplex
1— 60″ Langston Shear Cut
1— 62″ Cameron Type 6
1— 72″ Cameron Type 10; A-F Brng
1— 72″ Cameron Type 10 Shear Cut; A-F Brng
1— 92″ Cameron Type 28-3 Duplex w/Vari-Drive

36″ Maximum Rewind Diameter

1— 62″ Cameron Type 8
1— 70″ Variable Speed Center Winder
1— 72″ Johnstone w/Vari-Drive; A-F Brng

42″ Maximum Rewind Diameter

1— 40″ Egan Shear Cut; A-F Brng
1— 60″ Kidder Model SH Low Bed
1— 72″ Beloit Shear Cut
1— 82″ Langston Shear Cut; A-F Brng
1— 82″ Cameron Type 8-10
1—136″ Cameron Type 18; A-F Brng

48″ Maximum Rewind Diameter

1— 86″ M & W Four Drum Shear Cut
1—154″ Langston Shear Cut

60″ Maximum Rewind Diameter

1—110″ Cameron Type 18 w/Motor Drive
1—136″ Langston Type DA Shear Cut; A-F Brng
1—148″ Langston Shear Cut; A-F Brng

STOCK CLEANERS

2—1000 g.p.m. Shartle Hydrafuges w/motors
14—Bird Dirtecs; 2″ & 6″ bronze
1—Bird Dirtec 12″, Rebuilt by Bird

SUPERCALENDERS

2— 30″ Norwood 4 roll
1— 63″ Norwood 8 roll; A-F Brng
1— 65″ Norwood 8 roll; A-F Brng
1— 92″ Norwood 7 roll w/drive

SUCTION EXTRACTOR ROLL—DOWNINGTOWN

1—105″ face x 19″ dia. w/L-7 Nash Pump

TRIMMERS—POWER BACK GAUGES

2— 38″ Seybold w/motors
1— 57″ Seybold Precision
3— 65″, 74″, & 84″ Seybold Daytons
2— 74″ & 84″ Seybold 12Z w/air tables
1— 94″ Seybold Precision w/air table

VACUUM PUMPS

7—H-4, ½H-5, & H-5 Nash
4—L-5, L-6, & L-7 Nash
2—K-4 & K-7 (new) Nash
6—#2, #3, #4, #6 & #7 Nash Hytors
1—8 x 10 Connersville
2—MD-2 Nash w/motors; new laboratory models

YANKEE DRYERS

1—132″ face x 10′ dia Beloit; 35 psi

Screening Methods and Principles

Effe... the Mill ... Refiners

Situations Wanted

EXECUTIVE - WORK MANAGER

—in manufacture of boards & papers; their conversion; and film. Wishes change for challenging opportunity. Successful record in production; organization; labor relations, & development. Address Box 59-137 care Paper Trade Journal. N-30

MILL MANAGER OR GEN. SUPERINTENDENT

Experienced paper maker — wide knowledge kraft, specialty & printing papers wishes to make change. Know high speed operations—stock preparation & maintenance. Prefer southern location. Excellent references. Presently employed. Box 59-320 care Paper Trade Journal. N-30

For Sale

FOR SALE

1—#7½ C-Reeves Drive-Horizontal
1—#6 Reeves Drive-Vertical
1—15 HP Enclosed One Unit Reeves Drive
2—15 HP Enclosed One Unit U.S. Varidrive
1—10 HP Enclosed One Unit Sterling Speed Trol
1—3 HP Enclosed One Unit Sterling Speed Trol
1—1500 lb. Beater
1—72"—9 Roll Calender Stack—
Bottom Roll—18⅞" Diameter
Top Roll—16" Diameter
Intermediate Rolls—12", 10" and 9" Diameters
6—Asst. Cone Pulleys
Bottom & Top Frames for 48" Dryers
1—Set of Press rolls
One Rubber 15" diameter
One Brass Covered 13" diameter
1—76"—2 Drum Reel—60" Diameter Rolls
1—76" Cameron 14—60" Diameter Rolls, Used Very Little

12 DRYERS

5—48" x 84" Wide
5—48" x 86" Wide
2—48" x 88" Wide

If interested, please write Box 59-334 care Paper Trade Journal. N-30

HYDRAULIC DEBARKING PUMP

Byron-Jackson Hydropress Pump, 16 stage, 15"MB, 1500 psi at 100 gpm. 150 HP Louis Allis vertical electric motor, 220/440 volt AC, 3/60, 3550 rpm, magnetic starter. One year of use in government plant as steel descaler. Milt Groban 9656 S. Merrion Ave., Chicago 17, Ill. Tel. SAginaw 1-3442. N-30

For Sale

RPM

16 FT. DILTS HYDRAPULPER

Batch Type rated 52 tons per days at 3% and 80 tons per day at 5%. C. I. Sectional Tub.

5 ft. dia. Impeller, Westinghouse, 125 h.p. motor, Shaw Electric Hoist. New drive. Installed 1954. Excellent condition as it was used on baled pulp only.

ROSS PAPER MACHINERY COMPANY
265 Passaic St., Newark 4, N. J.
Phone:—HUmboldt 2-2177 TF

FOR SALE—1—Nash size H-10 Vacuum Pump. Excellent condition. Address Box 59-316 care Paper Trade Journal. N-30

Wanted

WANTED

Type 18 Cameron Winder, or similar machine in good condition. 90"-102". Please give full description, including price, serial number and prints. Reply to Box 59-323 c/o Paper Trade Journal. D-7

WANTED
VACUUM TYPE DECKER

Capacity 40 tons per day.
1% to 4% consistency reworked fiber. Address Box 59-335 care Paper Trade Journal. N-30

WANTED: Embossing Rolls to emboss paper 50" or 60" wide. Address Box 59-332 care Paper Trade Journal. N-30

IDEAS FROM THESE OUTSTANDING BOOKS WILL HELP YOU

MODERN PULP AND PAPER MAKING
Revised and enlarged 3rd Edition, edited by John B. Calkin, Consultant to the Pulp, Paper and Chemical Process Industries.
Completely describes and discusses all principles involved in modern pulp and paper making. 558 pages.

UNIVERSITY OF MAINE LECTURES ON PULP AND PAPER MANUFACTURE
(Series No. 2)
Edited by L. C. Jeness and John Lewis
Complete with illustrations and diagrams, here's an entire series of lectures given at the University of Maine by men who based their talks on practical experience and facts. 374 pages.

PULP AND PAPER MILL INSTRUMENTATION
By E. J. Cole and M. Todd
The first book ever published devoted solely to this subject, covers the application of instruments to all pulp and paper processes. 117 pages.

PULP, PAPER AND BOARD MILL MAINTENANCE
Edited by John C. W. Evans
Presents complete procedures for plant maintenance on all paper and pulping operations. 126 pages.

PULP AND PAPER MANUFACTURE
(Published in 4 Volumes)
J. N. Stephenson, editor-in-chief
Volume I: The Preparation and Treatment of Wood Pulp, 337 illustrations, 90 tables, 1043 pages. Volume II: The Preparation of Stock for Paper Making. 194 illustrations, 13 tables, 587 pages. Volume III: Manufacture and Testing of Paper and Board. 450 illustrations, 945 pages. Volume IV: Auxiliary Paper Mill Equipment. 343 illustrations, 36 tables, 732 pages.

LOCKWOOD TRADE JOURNAL CO., INC.
49 West 45th Street, New York 36, N. Y.

YES, send me by post-paid return mail, each book I have checked on this coupon.

Name ..... Title .....
Company .....
Address .....
City ..... Zone ..... State .....

BOOK	PRICE
☐ MODERN PULP AND PAPER MAKING	$10.00
☐ UNIVERSITY OF MAINE LECTURES ON PULP AND PAPER	$ 5.00
☐ PULP AND PAPER MILL INSTRUMENTATION	$ 3.50
☐ MILL MAINTENANCE	$ 2.50
PULP AND PAPER MANUFACTURE	
☐ Volume I	$10.00
☐ Volume II	$ 7.50
☐ Volume III	$11.00
☐ Volume IV	$ 9.00

ADVERTISERS

Johnson, Alvin H., Co. ..... — Ross Paper Machinery Co. 47 & 48
Jones, E. D., Corp. ..... — Ruderman Machinery Exchange 46
Jones & Laughlin Steel Corp. ... — Rust Engineering Co. ..... —
Kalamazoo Tank & Silo Co. ... — Ryerson, Jos. T. & Son ..... —

Screening Methods and Principles

Chemical Treatment Processes

Modern Grinder Types

Effect of Pulpwood Quality

Pulpwood Transportation to the Mill and Wood Storage Methods

Mechanical Pulp from Disc Refiners

Fraction Mixing Process

White Water Systems

Modern Methods of Mechanical Pulp Manufacture

Control and Record Keeping

Removing the Bark from Pulpwood

Problems of Groundwood

Coarse Screening and Rejects Recovery

Quality

Theoretical Considerations of Screening Systems

Bleaching

Groundwood from Steamed Wood Blocks

Modern Woodyard Systems

Routine Testing and Control Methods

Mill Manpower Requirements

Factors Influencing Grinder Capacity

Modern Equipment for Screening

Stones and Stone Handling

Heterogeneity of Wood

Thickening

Grinder Control

Wood Handling Within the Mill

Stock Chest and Storage Systems

Grinder Drives and Governors

Comparison of Groundwood Pulps

Barking Methods and Bark Disposal

Grinder Room Arrangement

Instrumentation in a Groundwood Mill

Theoretical Aspects of Production

Economic Importance, Main Properties, and Uses of Groundwood

. . . written by K. H. Klemm, this new book in 241 pages comprehensively covers all aspects of groundwood pulp production. Price: $5.00 from Lockwood Trade Journal Company, 49 West 45th Street, New York 36, New York

LOCKWOOD TRADE JOURNAL CO., Inc.
49 West 45th Street, New York 36, N. Y.

Send postage prepaid, Remittance with order.....copies of Modern Methods of Mechanical Pulp Manufacture. Price $5.00. All New York City Orders are Subject to a City Sales Tax

Name .....

Street ..... *City and State*.....

ADVERTISERS

Albany Felt Co. 21
Allis, Louis Co. ..... —
Allis Chalmers Mfg. Co. ..... —
American Bitumuls & Asphalt Co. ..... —
American Bridge Div., U. S. Steel Corp. ..... —
American Cyanamid Co.,
Paper Chemical Dept. ..... —
Dyes Dept. ..... —
Organic Chem. Div. ..... —
Pigment Dept. .....Facing 10
American Defibrator Co. ..... —
American Paper & Pulp Co. Inc. —
American Potash & Chem. Corp. —
American S. F. Products Inc. .. —
American Steel & Wire Co. .... —
Anglo Paper Products Ltd. Facing 42
Annin Company ..... —
Antara Chemicals, Sales Div. Gen. Aniline & Film Corp. .... —
Apmew, Inc. ..... —
Appleton Machine Co. ..... —
Appleton Wire Works ..... —
Armco Drainage & Metal Prod. Co. ..... —
Armco Steel Corp. ....Facing 11
Armstrong Machine Works .. . —
Asten-Hill Mfg. Co. ..... —
Atherton James, Ltd. ..... —
Atlantic Coast Line R. R. .... —
Babcock & Wilcox Co. ..... —
Bahr Brothers Mfg. Co. ..... —
Bailey Meter Co. 44
Bauer Bros. Co. ..... —
Becco Chem. Div. Food Machy. Corp. ..... —
Beloit Iron Works Co. Bet. 18 & 19
Binet, Louis et Cie ..... —
Bird Machine Co. 17
Bixby, R. W., Inc. ..... —
Black-Clawson Co. ..... —
Bolton & Sons ..... —
Brandon Sales, Inc. ..... —
Broughton, A. E. & Co. ..... —
Brown Company ..... —
Buckeye Cellulose Corp. ..... —
Buffalo Forge Co. ..... —
Buffalo Pumps, Inc. .....Cover 3
Burgess Pigment Co. ..... —
Butterworth, H. W., & Sons Co. —
Cady, E. J., & Co. ..... —
Caldwell, Wm. & Co. ..... —
Cameron Machine Co. ..... —
Carthage Machine Co. ..... —
Celgar Ltd. ..... —
Central National Corp. Front Cover
Central Soya Co. ..... —
Ciba Company ..... —
Cities Service Oil Co. ..... —
Clark-Aiken Company 4
Classified Advertising 45
Clearing House 45
Cleveland Crane & Engrg. Co. —
Clupak, Inc. ..... —
Coffin Turbo Pump Co. ..... —
Columbia-Geneva Steel Div., U. S. Steel Corp. ..... —
Columbia-Southern Chem. Corp. Sub. of Pittsburgh Plate Glass Co. .....Between 42 & 43
Combustion Engrg. Co. ..... —
Conoflow Corp. ..... —
Conveyair Sales Ltd. ..... —
Corn Products Sales Co. ..... —
Crane Co. ..... —
Curtiss-Wright Corp. ..... —
Darling & Company ..... —
Davis, Frank H., Co., Inc. ... —
DeZurik Corporation ..... —
Dewey & Almy Chem. Co. ... —
Diamond Alkali Co. ..... —
Dierks Paper Co. ..... —
Dilts Machine Works ..... —
Dodge Mfg. Co. ..... —
Dorr-Oliver ..... —
Dow Chemical Co. ..... —
Dowell, Inc. ..... —
Doyle, J. E., Co. ..... —
Draper Bros. Co. ..... —
Dryden Paper Co., Ltd. ..... —
du Pont, E. I., de Nemours & Co., Dyestuffs Dept. ..... —
Electrochemical Dept. 39
Industrial & Biochem. Dept. —
Pigments Dept. ..... —
Dusenbery, John, Co. ..... —
Duverre Inc. 43
East Texas Pulp & Paper ..... —
Eaton Manufacturing Co. ..... —
Ebasco Services, Inc. ..... —
Egan Frank W., & Co. ..... —
Electric Mchy. Mfg. Co. ..... —
Elixman Paper Core Co. 44
Elwell-Parker Elec. Co. ..... —
English China Clays Sales Corp. —
Export Supplement ..... —
Extremultus, Inc. ..... —
Fairbanks Morse & Co. ..... —
Falk Corporation ..... —
Farrel-Birmingham Co. ..... —
Fibrecast Company ..... —
Fife Manufacturing Co. 44
Fisher Governor Co. ..... —
Fitchburg Screen Plate Co. .. —
Foxboro Co. ..... —
Frederick Iron & Steel Co. .... —
Garlock Packing Co. ..... —
Gaspesia Sulphite Co. Ltd. Facing 42
Gates Rubber Company ..... —
Geigy Chemicals Corp., Geigy Dyestuffs Div. ..... —
General Dyestuffs Co. ..... —
General Electric Co. ..... —
General Mills, Inc. ..... —
General Tire & Rubber Co. .... —
Gibbs-Brower Co. ..... —
Gilbert & Nash Co. ..... —
Glidden Company ..... —
Goodyear International Corp. ..... —
Goodyear Tire and Rubber Co. ..... —
Gottesman & Co. .....Front Cover
Goulds Pumps ..... —
Grace, W. R., & Co., Dewey & Almy Chem. Div. ..... —
Grinnell Co., The ....Back Cover
Gurley W. & L. E. ..... —
Hamblet Machine Co. ..... —
Harbison Walker Refractories —
Harshaw Chemical Co. 9
Heimbach, Thomas J. ..... —
Hendrick Mfg. Co. 43
Hercules Powder Co. ..... —
Hills-McCanna Co. ..... —
Hooker Chemical Co. ..... —
Houghton & Company ..... —
Huber, J. M. Corp. ..... —
Hudson Sharp Machine Co. .. —
Hungerford & Terry, Inc. .... —
Hunt, Rodney ..... —
Huyck Felt Company ..... —
Improved Machinery, Inc. ... —
Ingersoll-Rand Co. ..... —
Jagenberg Werke ..... —
Jenkins Brothers ..... —
Johns-Manville Corp. ..... —
Johnson Corp., The ..... —
Johnson, Alvin H., Co. ..... —
Jones, E. D., Corp. ..... —
Jones & Laughlin Steel Corp. ... —
Kalamazoo Tank & Silo Co. .. —
Kamyr, Inc. ..... —
Kidder Press Co. ..... —
Kinney Engineers Inc. ..... —
Knox Woolen Co. ..... —
Koppers Co., Inc. ..... —
Langston Samuel M., Co. .... —
La Papeterie ..... —
Lawson Company ..... —
Layton-Greenfield Inc. ..... —
Lestoil, Inc. ..... —
Link Belt Co. ..... —
Lockport Felt Co. .... —
Lockwood Directory ..... —
Lockwood Greene Engineers .. —
Lodding Engineering Co. 38
Lukon, Inc. ..... —
Lunkenheimer Co. ..... —
Lyddon & Co. 41
Magnus Metal Corp. ..... —
Main, Charles T., Inc. 40
Manchester Machine Co. 3
Marathon—A division of American Can ..... —
Mead Pulp Sales, Inc. 10
Metalsalts Corp. ..... —
Miller Corp., Harry ..... —
Millspaugh Ltd. ..... —
Minneapolis-Honeywell 2
Mixing Equipment Co. ..... —
Monsanto Chemical Co. 7
Montague Mch. Co. ..... —
Moore & White Co. ..... —
Morden Machines Co. ..... —
Mt. Vernon Mills Inc. ..... —
Murray, D. J., Mfg. Co. ..... —
Nalco Chemical Co. ..... —
Nash Engineering Co. ..... —
National Gypsum Co. ..... —
National Lead Co., Magnus Metal Div. ..... —
National Starch & Chem. Corp. —
National Tube Div., U. S. Steel Inc. ..... —
New Jersey Zinc Co. ..... —
Nichols Eng. & Research Corp. —
Nopco Chemical Co. ..... —
Norgren, C. A. Co. ..... —
Northeastern Paper Sales Facing 42
Norton Co. ..... —
Oakite Products Inc. ..... —
Ohio Injector Co. .....8 & 9
Paper Conv. Mch. Co. ..... —
Parsons & Whittemore 41
Patton Mfg. Co. ..... —
Penick & Ford ..... —
Penn. Ind. Chem. Corp. ..... —
Pennsalt Chem. Corp. ..... —
Perkins, B. F. & Sons, Inc. ..... —
Perkins Goodwin Co. ..... —
Permutit Co., Div. of Pfaudler Permutit Inc. 12
Pfauldler Permutit Inc., Permutit Div. 12
Pioneer Paper Stock Co. 42
Potdevin Machine Co. ..... —
Powell Valves ..... —
Price & Pierce, Ltd. ..... —
Provident Life & Acc. Insurance —
Railway Supply & Mfg. Co. .. —
Record Fdy. & Mch. Co. ..... —
Red Ray Mfg. Co. ..... —
Rice Barton Corp. ..... —
Riedel, Gus & Son ..... —
Riegel Paper Corp. ..... —
Robbins Instrument Co. ..... —
Rohm & Haas Co. ..... —
Ronningen-Petter Co. ..... —
Roosevelt Paper Co. ..... —
Ross, J. J., Co. ..... —
Ross, J. O., Engrg. Co. ..... —
Ross Midwest Fulton Corp. .... —
Ross Paper Machinery Co. 47 & 48
Ruderman Machinery Exchange 46
Rust Engineering Co. ..... —
Ryerson, Jos. T. & Son ..... —
Sandoz, Inc. ..... —
Sandy Hill Iron & Brass Works —
Scapa Dryers Inc. ..... —
Scott Testers ..... —
Seaboard Air Line R. R. Co. ..... —
Shartle Div., Black-Clawson Co. —
Shawinigan Resins Corp. .... —
Sheffield Corp. ..... —
Shell Chemical Corp. ..... —
Shuler & Benninghofen ..... —
Shy, C. D. & Company ..... —
Signode Steel Strapping Co. .. —
Sinclair Company ..... —
Sirrine, J. E., Co. 42
SKF Industries ..... —
Smidth, F. L., & Co. ..... —
Socony Mobil Oil Co. ..... —
Sonoco Products Co. ..... —
Southworth Machine Co. ..... —
Spooner Dryer & Eng. Co. .. —
Spraying Systems Co. ..... —
Sprout Waldron & Co. ..... —
Stadler Hurter & Co. ..... —
Staley Mfg. Company ..... —
Stanley Steel Company ..... —
Stebbins Engrg. Co. ..... —
Stein, Hall & Co. ..... —
Stephens-Adamson Mfg. Co. .... —
Stone & Webster Eng. Corp. . —
Stowe-Woodward, Inc. ..... —
St. Regis Paper Co. ..... —
Sunday, George M., Assoc. .. 45
Taylor Instrument Co.'s ..... —
Taylor Stiles & Co. 43
Taylor-Wharton Company ..... —
Techno Corp. ..... —
Tennessee Coal & Iron Co. ..... —
Tennessee Corp. ..... —
Testing Machines ..... —
Texaco, Inc. ..... —
Texas Gulf Sulphur ..... —
Thiele Kaolin Co. 6
Thomas Paper Stock Co. 44
Titanium Pigment Corp. 20
Towmotor Corp. ..... —
Turner Halsey Co. ..... —
United Engrg. & Fdy. Co. ..... —
U. S. Industrial Chem. Co. Div. of National Distillers & Chem. Corp. ..... —
U. S. Rubber Company ..... —
U. S. Steel Corp. ..... —
United States Steel Export .... —
United States Steel Supply Co. .. —
Valley Iron Works ..... —
Vanderbilt R. T. Co. ..... —
Virginia Smelting Co. ..... —
Voith, J. M., G. m. b. h. .... —
Waldron-Hartig Div., Midland Ross Corp. ..... —
Waldorf Industrial Controls .. —
Walworth Co. ..... —
Weber, H. G., Company .... —
West End Chemical Div., Stauffer Chem. Co. ..... —
Westvaco Div., Food Mchy. & Chem. Corp. ..... —
West Virginia Pulp & Paper Co. ..... —
Weyerhaeuser Timber Co. .... —
Wheeler Roll Co. 40
Williams Apparatus Co. ..... —
Williams-Gray Co. ..... —
Wisconsin Wire Works ..... —
Witco Chemical Co. ..... —
Woodpulp, Inc. ..... —
Wood's, T. B., Sons Inc. .... —
Wyandotte Chem. Corp. ..22 & 23
Wyatt Metal & Boiler Works .. —
Yarnall-Waring Co. ..... —

While we strive for accuracy in preparing the above index which is purely a service to our readers, we cannot be responsible for errors.

PAPER TRADE JOURNAL

BUSINESS STAFF

Arthur E. Gordon, Business Mgr.

Francis J. Gordon — Alrick Man

New York 36, N. Y. 49 W. 45th St. Plaza 7-2370
Cable: "Lockmin"

CHICAGO 3, ILL.: H. K. Vinton
Room 1020, 79 W. Monroe St. CEntral 6-2784

PITTSBURGH 11, PA.: H. L. Poulton
610 Penwidge Road. HEmlock 1-1571

MIAMI 38, FLA.: Hal Moore
279 N. E. 79th Street. PLaza 8-5516

Rep. by McDonald-Thompson in:

LOS ANGELES 5, CAL.: R. Teeter
3727 W. Sixth St., DUnkirk 7-5391

SAN FRANCISCO, CAL.: Cal Wood
625 Market St. YUkon 1-2245

DENVER 3, COLO.: Bob Heidersbach
620 Sherman Street. KEystone 4-4669

PORTLAND 4, ORE.: Fred Goetz
404 Times Bldg. CA 2-5146

DALLAS 19, TEXAS: Parker Harris
2727 Oak Lawn Ave., LAkeside 7-1324

HOUSTON 6, TEXAS: F. Vickrey
Room 214, 3217 Montrose Blvd. JAckson 9-6711

SEATTLE 4, WASH.: H. Abney
1008 Western Ave. MA 3-3766

Frederick B. Grosse, Production Mgr.
New York 36, N. Y. 49 W. 45th St. Plaza 7-2370
Cable: "Lockmin"

Foreign Representatives

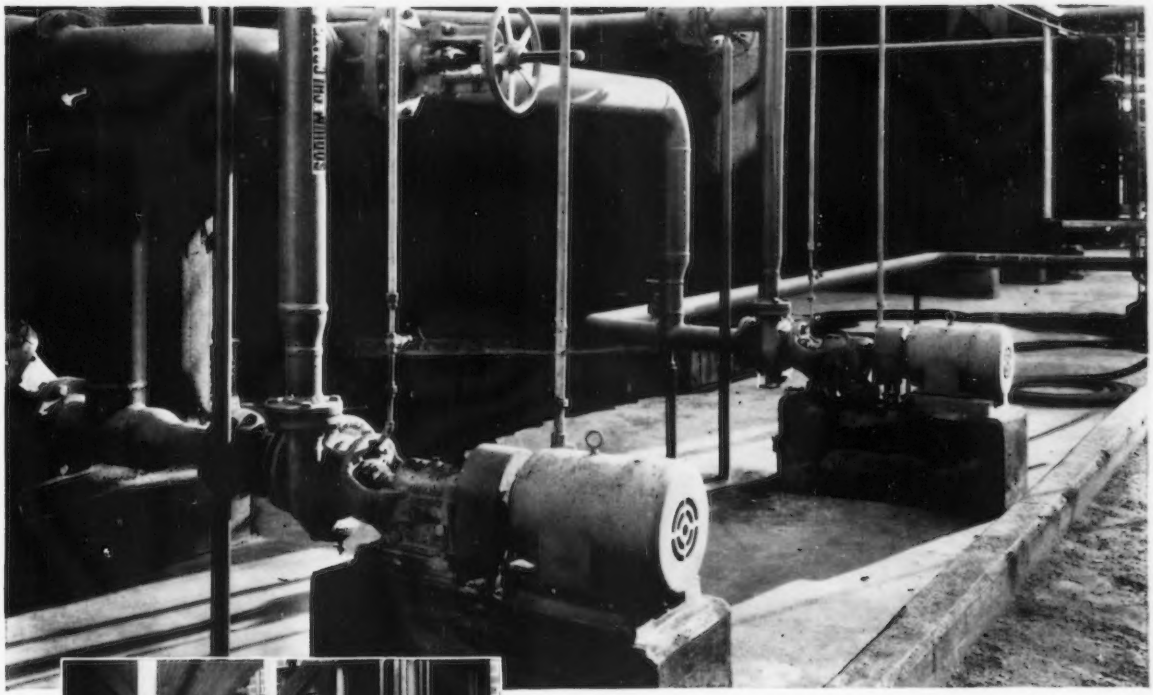
EUROPE except U.K. & Germany
John Ashcraft
67 Avenue des Champs Elysees, Paris, 8.

GERMANY
Herbert Morgenbesser
Kohlgarten, 3, Hamburg-FU. Phone 59-82-83

TOKYO, JAPAN
George C. Olcott, Business Manager,
International Media Representatives Ltd.,
Shadan Hojin, 14.2—Chome Marunouchi

UNITED KINGDOM
John Eckford-Prossor, Agent,
Stafford House, Norfolk St., Strand, London, W.C.2
Phone TEmple Bar 7397

HUGHES PRINTING CO.
EAST STROUDSBURG, PA.



Above — "Buffalo" Single Suction Full Ball Bearing Pumps, stainless steel construction, handling sodium chlorate.

CORROSION— CONTAMINATION CONTROLLED WITH "BUFFALO" PUMPS

At left — "Buffalo" Single Suction Pumps of stainless steel construction handling hydrogen peroxide bleach.

Using a wide range of materials of construction, "Buffalo" offers a line of pumps capable of handling your toughest liquid moving job. You can order a "Buffalo" pump made of Hastelloy B or C, nickel, bronze, lead, stainless, in fact just about any material that can be cast and machined.

Properly applied, these pumps can cut your liquid moving costs, reduce down-time due to pump failure and improve quality control where contamination may be a factor.

For your tough liquid moving jobs, phone or write your "Buffalo" Engineering Representative or write direct. Tell us the liquid you want to pump and we will be pleased to suggest the best material of construction for the job.

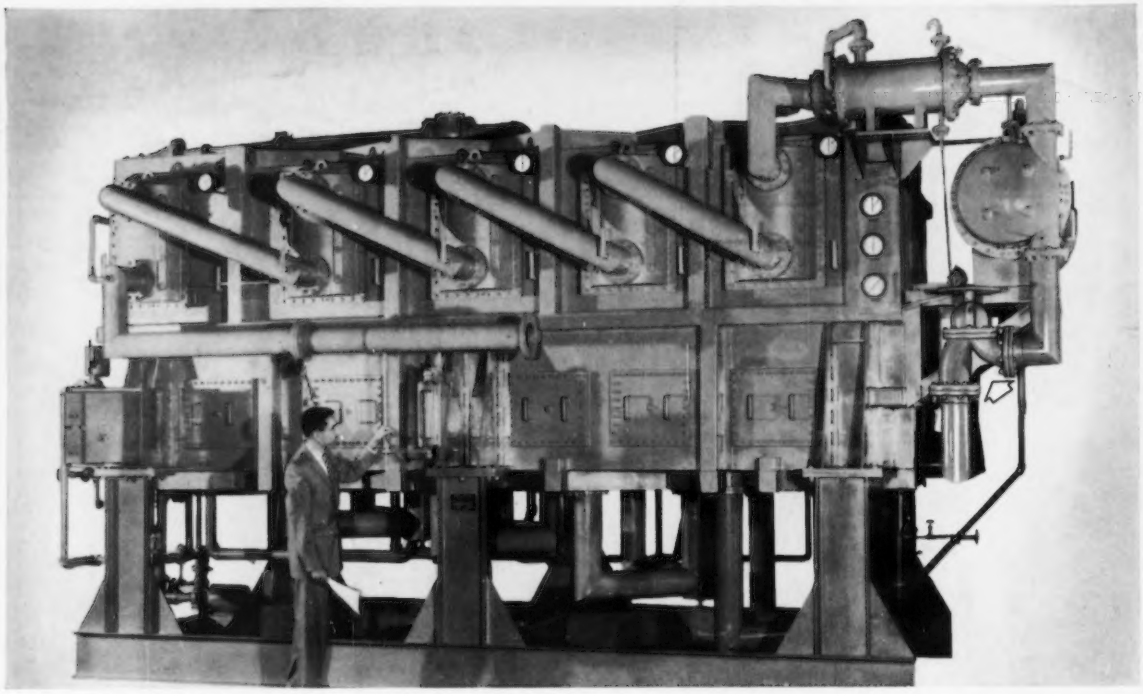
"Buffalo" PUMPS

BUFFALO PUMPS DIVISION OF BUFFALO FORGE CO.

159 Mortimer Street, Buffalo, N. Y.

Canada Pumps Ltd., Kitchener, Ont. Sales Representatives in all Principal Cities

A BETTER CENTRIFUGAL PUMP FOR EVERY LIQUID



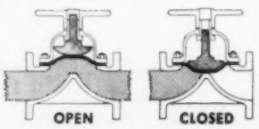
ON LAND At Salinas, a tourist center in Ecuador, this Cleaver-Brooks Flash Evaporator delivers 50,000 gallons of pure, distilled water every 24 hours. It is equipped with two 6", rubber lined, weir-type Grinnell-Saunders Diaphragm Valves — only one of which can be seen from this view.

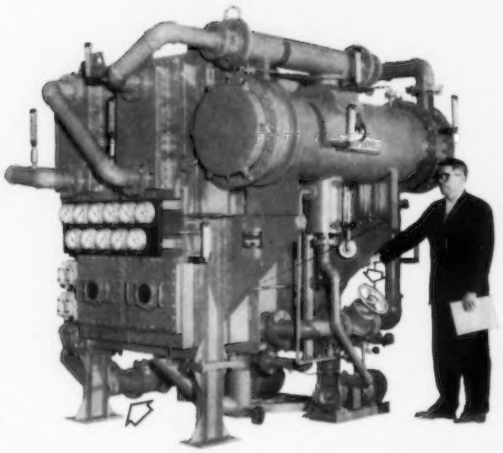
Grinnell-Saunders Diaphragm Valves help convert salt water to fresh water

You can convert sea water to fresh water, in abundant supply, on land . . . or on shipboard, with flash evaporators made by Cleaver-Brooks Special Products, Inc., Waukesha, Wisconsin. Grinnell-Saunders Diaphragm Valves are used as original equipment on these distillation units because they offer positive, leak-tight closure; flow control in throttling position; corrosion-resistance.

You'll find Grinnell-Saunders valves widely used in other fields, too . . . petroleum, papermaking, chemical, food, compressed air . . . to mention a few.

The operating principle of the Grinnell valve is the feature which makes it so adaptable. The diaphragm lifts high for streamline flow in either direction; seals tight for positive closure against grit, scale, solid matter, pressure or vacuum. Bonnet mechanism is completely isolated at all times from the fluid in the line by the diaphragm, preventing corrosion and contamination. Smooth passage, without pockets, eliminates trapping of solids and reduces frictional resistance. And you can get body, lining and diaphragm materials to meet your particular service conditions. Get *all* the facts. Write Grinnell Company, Providence 1, R. I.





AT SEA The nuclear powered NS Savannah has two 16,000 gallons-per-day Cleaver-Brooks distillation units to supply the entire water requirements of crew and machinery. Each unit has two 4" Grinnell-Saunders Straightway Valves of ductile iron.

GRINNELL

Pipe, Fittings, Valves, Hangers, Heating and Piping Supplies
Branch Warehouses and Distributors From Coast To Coast